

GREAT LIVES

- | | |
|--------------------|---------------------------|
| 1. SHAKESPEARE | 39. SHELLEY |
| 2. QUEEN VICTORIA | 40. FARADAY |
| 3. WAGNER | 41. MOZART |
| 4. JOHN WESLEY | 42. HANDEL |
| 5. JOSHUA REYNOLDS | 43. GARIBALDI |
| 6. CECIL RHODES | 44. COBDEN |
| 7. GLADSTONE | 45. GORDON |
| 8. GEORGE ELIOT | 46. DRAKE |
| 9. THE BRONTËS | 47. TOLSTOY |
| 10. CHARLES II | 48. ABRAHAM LINCOLN |
| 11. DICKENS | 49. CAPTAIN COOK |
| 12. BEETHOVEN | 50. DOCTOR JOHNSON |
| 13. H. M. STANLEY | 51. WOLSEY |
| 14. WILLIAM BLAKE | 52. PRINCE CHARLES EDWARD |
| 15. SHERIDAN | 53. PALMERSTON |
| 16. ROBERT BURNS | 54. THOMAS GRAY |
| 17. EDWARD VII | 55. WILLIAM PITT |
| 18. THACKERAY | 56. DE QUINCEY |
| 19. NAPOLEON III | 57. KEIR HARDIE |
| 20. STRINDBERG | 58. FLORENCE NIGHTINGALE |
| 21. NELSON | 59. KING JAMES I |
| 22. CHOPIN | 60. SPINOZA |
| 23. NIETZSCHE | 61. LIVINGSTONE |
| 24. HAIG | 62. ALFRED THE GREAT |
| 25. BACH | 63. WORDSWORTH |
| 26. MILTON | 64. RUSKIN |
| 27. DARWIN | 65. DISRAELI |
| 28. BYRON | 66. JOHN KNOX |
| 29. VAN GOGH | 67. WELLINGTON |
| 30. JANE AUSTEN | 68. CARDINAL MANNING |
| 31. CHARLES LAMB | 69. DOSTOEVSKY |
| 32. KEATS | 70. ASQUITH |
| 33. WILLIAM MORRIS | 71. QUEEN ELIZABETH |
| 34. HUXLEY | 72. MARY QUEEN OF SCOTS |
| 35. W. G. GRACE | 73. CLIVE |
| 36. NEWMAN | 74. ST. FRANCIS OF ASSISI |
| 37. DUMAS PÈRE | 75. PEEL |
| 38. CARLYLE | 76. KING CHARLES I |
| | 77. LISZT |

A complete list of the GREAT LIVES with the authors' names
can be had on application.

DUCKWORTH, 3 Henrietta Street, London, W.C.2.

W R E N

by GEOFFREY WEBB

Great Lives

DUCKWORTH

3 HENRIETTA STREET
LONDON W.C.2

First published . . . 1937
All rights reserved

Made and Printed in Great Britain
By The Camelot Press Ltd
London and Southampton

CONTENTS

Chapter I *page 11*

Family – Bishop Wren – Dean Wren – the Holders – first scientific work – Oxford after the Civil War – the beginnings of the Royal Society – appointed professor at Gresham College – scientific work of the late fifties and sixties – recognition of the Royal Society – Savilian Professor at Oxford.

Chapter II *41*

The Sheldonian Theatre – the profession of architecture in the seventeenth century – the visit to Paris – the first St. Paul's scheme – the Fire of London and the rebuilding of the City – contemporary architects – appointment as Royal Surveyor – the Office of Works – Sir John Denham – Hugh May – Wren's first marriage.

Chapter III *67*

Periods of Wren's architectural career – Hooke's Diary – the City churches – secular buildings of the seventies – Trinity College Library, Cambridge – Charles's Mausoleum design – St. Paul's first model – St. Paul's second model – St. Paul's warrant design – Wren and Hooke – death of Lady Wren – Wren's second marriage – births of his children.

Chapter IV *92*

Chelsea Hospital and Winchester – alterations at Whitehall for James II and Mary II – work at the Temple – Christ Church, Oxford, and Wren's Gothic – the Royal Society – Parliament – Wren as a man of affairs – progress of St. Paul's – Wren's craftsmen – Hampton Court and Kensington Palaces – Wren's later colleagues – Greenwich Hospital and the designs for Whitehall.

Chapter V *page* 122

Wren and his builders – the Office of Works under Queen Anne – last works at St. Paul's and the difficulties with the Commissioners – Wren's family – partial retirement from the Office of Works – dismissal – the last works at Westminster – architectural writings.

Appendix. Portraits of Sir Christopher Wren 141

Kindly supplied by C. K. Adams, Esq., Assistant to the Director of the National Portrait Gallery.

Bibliography 143

CHRONOLOGY

- 1632....Birth of Sir Christopher Wren.
- 1634....The Reverend Christopher Wren becomes Dean of Windsor.
- 1646....Christopher Wren leaves school and family removes to Bletchington.
- 1649....Admitted gentleman commoner at Wadham College, Oxford.
- 1653....Graduates M.A. Elected Fellow of All Souls College, Oxford. Wallis lectures on the "Geometrical Flat Floor."
- 1657....Becomes Professor of Astronomy at Gresham College, London.
- 1660....Royal Society founded.
- 1661....Becomes Savilian Professor of Astronomy at Oxford. Consulted as to Old St. Paul's.
- 1663....Design of Sheldonian Theatre, Oxford. Pembroke College Chapel, Cambridge begun.
- 1665....Visits Paris.
- 1666....Scheme for repair of Old St. Paul's. Fire of London. Appointed to Commission for the rebuilding of the City.
- 1669....Appointed Royal Surveyor. Married to Faith Coghill. Begins design of new St. Paul's.

- 1670....Coal Tax increased to 3s. Work on City Churches begun.
- 1672....Hooke's Diary opens. St. Stephen's, Walbrook, begun.
- 1673....Knighted. First model design of St. Paul's abandoned, and second great "model" begun.
- 1675....Royal warrant to proceed with St. Paul's on design as shown. Work begun. Son Christopher born. Lady Wren's death.
- 1676....Library at Trinity College, Cambridge, begun.
- 1677....Married to Jane Fitzwilliam.
- 1679....Member of Council of Hudson Bay Company. N. Hawksmoor joins his staff (?)
- 1680....Death of second Lady Wren.
- 1681....President of the Royal Society. Tom Tower, Christ Church, Oxford designed.
- 1682....Chelsea Hospital begun.
- 1685....Work at Whitehall for James II. Elected M.P. for Plympton.
- 1689....Hampton Court and Kensington Palaces begun. Talman made Comptroller of the Works.
- 1693....First schemes for Greenwich Hospital. Christ's Hospital additions.

- 1697....Choir of St. Paul's opened. Half salary
for St. Paul's suspended.
- 1698....Fire at Whitehall Palace.
- 1699....Greenwich Hospital begun. Vanbrugh
designs Castle Howard.
- 1702....Jane Wren (daughter) died. Vanbrugh
made Comptroller of the Works.
- 1704....St. Paul's used for Thanksgiving Service
after Blenheim.
- 1707....Lead of dome undertaken at St. Paul's.
- 1711....St. Paul's declared finished and salary
paid up.
- 1714-15 Partially retired from Office of Works.
- 1718....Dismissal from Office of Works.
- 1719....Scheme for north transept of Westminster
Abbey approved.
- 1723....Death of Sir Christopher Wren.

CHAPTER I

Family – Wren Bishop – Dean Wren – the Holders – first scientific work – Oxford after the Civil War – the beginnings of the Royal Society – appointed professor at Gresham College – scientific work of the late fifties and sixties – recognition of the Royal Society – Savilian Professor at Oxford.

SIR CHRISTOPHER WREN was born a gentleman. It would be irrelevant to say this of Shakespeare or Constable or Sir Isaac Newton, and it is perhaps something in the social preoccupation of architecture that makes it of importance in the case of Wren. The members of Sir Christopher Wren's family with whom he had most to do were his father Christopher, his uncle Matthew, his sister Susan and her husband William Holder. The brothers, Matthew born 1585, and Christopher born 1589, were sent by their father Francis Wren, mercer and citizen of London, to Merchant Taylors' School, and there had the good fortune to come under the notice of Lancelot Andrews, then Master of Pembroke College, Cambridge. Matthew was admitted there in 1601, Christopher going not long after to St. John's College, Oxford. The favour of Lancelot Andrews was a great thing for the Wren brothers, for the Master, now Dean of Westminster, was no less successful than saintly; he was shortly (1605) made Bishop of Chichester, then, four years later, Bishop of Ely, and in 1619 translated to Winchester. With him the Wrens rose also, especially Matthew, who

became a Fellow of his college, then Canon of Winchester, and later was appointed one of the two chaplains who accompanied Charles I, when Prince of Wales, on his visit to Madrid. By this appointment Andrews put his protégé in the way of further and greater advancement in the new reign that began the year before his death (1626). For personal acquaintance with and proximity to the sovereign was in the seventeenth century the high road to official promotion. The younger brother, Christopher, also shared the Bishop's favour, becoming his chaplain, and receiving in succession the livings of Fonthill and East Knoyle in Wiltshire. And so the Wren family became attached to the High Church Academic side of the Court circle, and for the disciples of Lancelot Andrews it was a circle distinguished in other ways as well as socially, for that great man had not only the gift of divining merit in his followers, but of lending to his chosen something of his own extraordinary distinction of outlook. The expressions "High Church," "Court" and "Academic" may seem to have a dry sound to modern ears, but it was men like Andrews who themselves constituted the splendour of the Stuart Court, the loveliness of the Church of England, and the greatness of her learned tradition; and Toryism for many generations to come was to find its justification in preserving intact the image of their work.

In the year that his patron died, Matthew Wren became Master of Peterhouse at Cambridge, where he applied himself to a thorough reorganisation of the society, including its buildings. The

crowning work was the building of the chapel, a curious and charming building, that seeks to combine the richness and fancy of the Flemish Renaissance fashion of the time with a conscious recollection of late Gothic, to enforce the continuity of English Church tradition. Wren finished the chapel *internally*, but left the outside brick and stone dressings. The later stone facings were the enterprise of his successor the famous Bishop Cosin. At the end of his life, Matthew Wren was to afford his nephew a first opportunity as an architect, in the building of another college chapel for Pembroke. In 1628, Matthew became Dean of Windsor and Registrar of the Order of the Garter, and, in 1634, Bishop of Hereford, an office he only held one year before his translation to Norwich. During that year, however, he had a most congenial task in drawing up a consecration ceremony for the renovated Abbey Dore, a twelfth-century abbey church which Lord Scudamore had restored for the parish use in the best taste of the day. The task was not only gratifying by reason of the occasion, but in itself, for we have Clarendon's evidence that Matthew Wren was "particularly versed in the old liturgies of the Greek and Latin Churches." He is also known to have composed services for the re-admission to the Church of sailors who had been forced into apostasy by the Moslem pirates of Barbary. Matthew was succeeded at Windsor by his brother Christopher, who had himself been appointed a Chaplain to the King in 1628.

Christopher Wren the elder married in September 1623, about the time that he obtained the

living at East Knoyle. The young lady was just under twenty-one, he himself being thirteen years older. She was the only daughter and heiress of Richard Cox, the squire of Fonthill, the village where Christopher had held the living for the past three years. Knoyle is not far from Fonthill, in a charming countryside, the village lying on the lower slopes of steep down-like hills ; and there the children were born, Mary in 1624, Katherine in 1626, Susan in 1627, Elizabeth (who died in infancy) in 1630, a son Christopher (born, baptised and dead in the same hour), 1631, and Christopher, the subject of this book, Thursday, October 20, 1632. "The bell rang eight (p.m.) as his mother fell in labour with him," as Aubrey says on Sir Christopher's own authority. In spite of this parade of accuracy, "astrologie ergo," it is amusing to note that Aubrey made a muddle of it, and confused the two Christophers : this came of being too clever, and consulting the registers instead of taking Sir Christopher's own word for it. In a letter to Anthony Wood, the Oxford biographer, Aubrey says : "Dr. Christopher Wren hath putt a trick on us, as it seems, for he hath made himself a yeare younger than indeed he is, though he needs not be ashamed of his age, he hath made such admirable use of his time. I mett t'other day accidentally with the parson of Knahill [Knoyle] who justifies the register, and not only so but proves it by his neighbour that was his nurse and her son that suckled with him - evidence notorious." There is, however, no doubt ; for Christopher Wren, the father, recorded the dates of family events on the flyleaf

of a copy of Helwig's *Theatrum Historicum*, 1618, now in the National Library of Wales.

Mrs. Wren had in all eleven children, of whom a second Elizabeth, born in 1633, died of consumption in 1644, and Anne, born in 1634, lived to marry a clergyman of the name of Brunsall and settle in Ely. She died in 1667. There were no surviving sons except Christopher, and the last child's birth is recorded in 1643; it is presumed that Mrs. Wren died not long after. Of the other daughters, one, name unknown, married a certain John Hook, an Oxford don, and Katherine married Richard Fulbourne of Windsor. Of Susan's marriage to William Holder we shall have to speak later on. Two years after the birth of his son, Christopher Wren succeeded his brother as Dean of Windsor and Registrar of the Order of the Garter (1634), and the King further presented him to the living of Great Haseley in Oxfordshire. It would seem that Wren's youth must have been passed largely between those two places, though Aubrey records that the family were at Knoyle after the surrender of Bristol to Fairfax in the autumn of 1645. Moreover, Dean Wren got into trouble with the local Puritan Committee in 1647, for adorning Knoyle Church with stucco reliefs executed the year before.

Christopher, the father, who is variously described as a "good general scholar and a good orator," and as a mathematician, a good musician and with some knowledge of drawing and architecture, has left some relics of his tenure of the rectory at Knoyle, which show him to have shared the taste of his time for ingeniously

contrived inscriptions, and the kind of decoration which the seventeenth century would have described as "conceited." They consist of an inscription in the hall of the rectory giving the date July 28, 1623, on which he moved into the new house; and in the church, besides inscriptions on the columns, with an ingeniously illegible spacing of the letters (these have since disappeared), there are the elaborate plaster relief decorations of scenes from Scripture adorned with flower borders and texts, to which we have referred. More practically, he restored the roof.

With the 1640's and the coming of the bad times of the Civil War, incident comes thick and fast into the annals of the Wren family. The young Christopher had begun his education under a tutor, the Rev. William Shephard, of whom we know nothing but the name, and from him is said to have passed on to Westminster School, where the great Dr. Busby had not long assumed the mastership. His schooldays lasted till 1646. But, in the meanwhile, events had occurred both in the family and the outside world that completely changed the boy's home life. In the first place, his sister Susan had married William Holder, a young don at Pembroke, Cambridge, Bishop Wren's old college, who had been elected a Fellow in 1640 and received the living of Bletchington in Oxfordshire in 1642, the year before his marriage. Holder's is the first important personal influence on the young Christopher Wren that we can trace at all clearly.

Aubrey, who knew both the Holders well, has left a very attractive picture of this household

where Wren passed so much of his time in early life. He specially mentions Holder's interest in music and mathematics and adds, "If one would go about to describe a perfect good man one would drawe this Doctor's character."

The Wrens had need of all the comfort that the importation of such a person into the family circle could bring, for not long before the marriage, in October 1642, came to Windsor "one Captain Fogg pretending a warrant from the King and demanding the Keys of the Treasury [of the Order of the Garter], threatening if they were denied him by the Dean and Prebendaries, to pull the Chapel about their ears." If he did not quite do that, at any rate he forced the doors with crowbars, and carried off the treasures with the exception of the smaller and more portable jewels, such as the George and Garter of Gustavus Adolphus, which the Dean had prudently buried in anticipation of some such disaster as this. We also know that the Wrens' house was pillaged and the Dean's personal belongings carried off, for some six years later he was able to get back a harpsichord, taken at this time, and also three volumes of the records of the Order, though only at considerable trouble and expense. The altar plate and the buried jewels, which had been discovered at a later date, were never recovered. The Dean and his family, including Holder, fled after this and, we hear from Aubrey, formed part of the garrison at Bristol throughout the period that the town was held for the King, from 1643 to 1645. After the surrender to Fairfax in the autumn of '45 they returned to Knoyle. In that

year also we hear that the deanery at Windsor was again pillaged, and the Dean deprived of his living at Great Haseley, but it seems unlikely that the family had been in residence at either of these places for some time. How far the young Christopher shared in this exile, or whether he was all the time at school at Westminster, we do not know. But at any rate his natural homes, Windsor and Oxfordshire, were impossible, as being too close to the centre of warlike operations, for the district between London and Oxford was the no man's land of the Civil War. But these were not the only misfortunes of the Wren family. Bishop Matthew had been severe with Puritans, both inside and outside the Church of England, and especially so with the colonies of foreign Protestants who had been allowed to settle in his diocese. The memory of his administrative severity in the Norwich diocese outlasted the three years of his tenure of the quieter see of Ely and made him a marked man to the extreme Puritan party.

In 1640 he was already threatened in the proceedings against Laud; and in 1641, after officiating for the last time at Windsor, on the occasion of the marriage of Princess Mary to the Prince of Orange, he was committed to prison, where he was to remain for eighteen years, till March 1660, when he was released by order of General Monk, whom he had befriended in the early days of his captivity. In the summer of 1646, Dean Wren and his son-in-law moved to the latter's rectory at Bletchington, which was henceforward to be the Dean's home. The war - or

such of it as still continued, for the King was a prisoner in the hands of the Scotch – was far removed from those parts. At the same time young Christopher is said to have left school.

The removal to Bletchington marks a turning-point in the lives of both father and son. For the father it was to prove a place of peace and rest after the troubles of the last four years, the plunder of his intimate possessions, the insecurity, the alarms and excursions of his life at Bristol. Inevitably it was rather a melancholy peace, for his brother was in prison, and three years later the King his master – and it is hard for us to realise quite what Charles meant to men of Dean Wren's way of feeling – was to be put to death. In the ten years that the Dean lived at Bletchington he was to see the forces of evil go from triumph to triumph, and when he died there in 1656 the usurping Government would seem settled in unassailable security. For young Christopher the turning-point was of a very different and much happier significance. To him the glories of Windsor can hardly have meant much more than a vague but highly coloured background to the memories of his early childhood, and the disasters of the past four years would sit fairly lightly on a schoolboy of fourteen.

Schools in the seventeenth century were very different from those of to-day ; there was less team spirit, and presumably less self-complacency. Moreover, Dr. Busby's Westminster, in spite of the fame of his beatings, and the supposed criticisms of Locke the philosopher (we have good evidence that Locke was rather difficult in his youth),

seems to have owed its outstanding position to the personal relationships established between the boys, especially those who were going to the university, and the great man himself. This personal factor in education has a value quite other than that of tradition, which is often a propitiatory name for herd feeling, and must have considerably softened the contrast between school and university for Wren and his contemporaries. There were other factors, too, tending in the same way for Wren ; all the evidence goes to show that he slipped into university life by degrees, over a period of two or three years, and had already established helpful connections in the academic world before he came into residence. We have no details of his schooldays. It has been suggested that he was a Town boy, and if that was so it would have almost certainly mitigated the severity of his experience at Westminster. One or two Latin exercises have survived. A Latin letter of a formal kind, written to his father when he was ten years old, would be phenomenal nowadays, but is not unprecedented in a seventeenth-century child. Some Latin verses, written in 1645, are more remarkable, not only for their skill and elegance, though these are sufficiently striking for a boy of thirteen, but by reason of their subject matter – the presentation of an astronomical instrument, of his own invention, to his father. The young man was about to enter into the first of his kingdoms.

There is a confusion about the beginning of Wren's life at Oxford. The *Parentalia*, a record of the Wren family compiled by Sir Christopher's

grandson, gives the date of his entry as a gentleman commoner at Wadham College as 1646, the Wadham documents give 1649. He took his B.A. degree in March 1651. The date of the family removal to Bletchington, however, is certain, and it seems likely that his connection with Oxford, if not with Wadham itself, dates from this removal. Two other facts seem to point to an interval between school and regular attendance at the university. Aubrey in his *Life of Holder* says : "He was very helpful in the education of his brother-in-law, Mr. Christopher Wren (now knighted), a youth of a prodigious inventive witt, and of whom he was as tender as if he had been his own child, whom he instructed first in geometrie and arithmetique, and when he was a young scholar at the University of Oxford, was a very necessary and kind friend. The parsonage house at Bletchington was Mr. Christopher Wren's home and retiring place ; here he contemplated and studied, and found out a great many curious things in mathematiques. About this house he made several curious dialls, with his own hands which are still there to be seen." The natural time for all this would be the first years at Bletchington, for it is difficult to see how Holder could have given young Christopher much instruction during the bad times while the boy was at Westminster and Holder himself at Bristol, but facts are so scarce that we cannot be sure.

Whenever Holder may have begun his teaching, it is certain that about this time (1646) Wren began his connection with Dr. Charles Scarborough, an eminent scientist and physician, to

whom the young man declares in one of his extant Latin letters that he owed his recovery from a serious illness if not his life itself. Scarborough's interests were not confined to the medical sciences, he was almost equally eminent in mathematics. In a Latin letter to his father dated 1647, young Christopher gives some details of his work with Scarborough. He refers to Scarborough's kindness to him, mentions a self-recorded meteorological instrument, weather clock he calls it, that he has invented and Scarborough is having made, and, most important, tells how he is undertaking at Scarborough's instance the translation of Oughtred's treatise on Geometrical Dialling into Latin. There was no question of a mere academic exercise in one of the classic tongues in this, it was seriously intended to make the work available to foreign students. Scarborough and his friend Seth Ward were enthusiastic admirers of Oughtred, whose *Clavis Aurea* they had introduced as a mathematical textbook at Cambridge, and now the former passes on this new task to his young pupil. A letter from Wren to Oughtred on the subject of the translation is extant, and there are flattering references to the young scholar in the later editions of Oughtred's works. In the same year, 1647, Wren took out a patent for an instrument for writing with two pens, about which some difficulty later arose, others having claimed the invention for themselves. An undated letter is extant protesting at this, and saying that Wren's invention had been brought to the knowledge of Oliver Cromwell himself. We do not know the

upshot of it all, but two facts emerge : first that at this time Wren's activities were not confined to Oxford and that he was a good deal in London, where Scarborough lived ; and second, by inference, that he had already got in touch with those inner Cromwellian circles that we shall find him occasionally frequenting a few years later, in spite of his Royalist upbringing. It is most probable that such an invention as the "diplographic pen" would be brought to the notice of Cromwell by Wilkins, the Warden of Wadham, who stood well in that quarter, and whose friendship for Wren probably dates from this time. It is almost certain that it is to this early association with Scarborough that Wren owed his interest in the medical sciences, the chief fruits of which were his work with Willis and Lower, especially the illustrations that he was to draw for Willis's *Cerebri Anatome*, and his own experiments on injections into the veins of animals and the transfusion of blood. But these were not to be Wren's chief scientific interests, which remained those of astronomy and the mathematical sciences.

There is a type of scientific worker whose gifts lie in the direction of mechanical aptitude for the devising and perfecting of experiments and apparatus, though it is impossible to excel in this without a profound understanding of the foundations of the subjects concerned, and it is no mere question of mechanical ingenuity or manual dexterity. It would seem that Wren as a man of science belonged by nature to this class, but this must be said with considerable

reservations. Bishop Sprat, an Oxford friend and devoted admirer of Wren, has inserted in his history of the early years of the Royal Society a list of Wren's scientific discoveries and inventions, prompted to do so by the modesty of his idol "who," he says, "is so far from usurping the fame of other men that he endeavours with all care to conceal his own." The list includes many mechanical devices and improvements to existing instruments, such as a variety of self-registering meteorological instruments, and improvements to telescopes in the way of "many sorts of rachis screws and other devises . . . for taking small distances and apparent diameters to seconds." He also mentions Wren's improvements in the grinding of lenses. Besides all this, there are the more lasting results of his experiments to establish the "Doctrine of Motion," of the results of which Sir Isaac Newton wrote: "From these laws [the laws of motion] Dr. Christopher Wren, Knight, John Wallis and Christian Huyghens, who are, beyond comparison, the leading geometers of this age, arrived at the laws of the collision and mutual rebound of two bodies ; but their truth was proved by Dr. Wren by experiments on suspended balls in the presence of the Royal Society." One modern writer has claimed that Wren and his master, Wallis, were the founders of modern mechanics, and another, who is certainly not unmindful of the variety of Wren's scientific work, has declared that his special gift was for geometrical demonstrations, citing his scheme for the graphical construction of solar and lunar eclipses and the occultations of stars, and

his "beautiful geometrical method for one of the steps in the graphical determination of a comet's path."

The part of Wren's life when he was pre-eminently a man of science covers twenty years, from 1645 to 1665 ; and, of that, for the first five years he was hardly more than a precocious schoolboy, and in the last two he had already shown signs of that interest in architecture which was eventually to become an almost exclusive preoccupation. It is a period in the history of science in England between the great names of Harvey, the discoverer of the circulation of the blood, and Sir Isaac Newton, when the strength of the movement lay in the number of solid, able workers rather than in the genius of one or two great men. Moreover, it was the time of the invention of methods and apparatus, Napier's logarithms, Gunther's slide rule, the development of algebra under Victor of Paris, Herriot and Wallis, Galileo's telescope at the beginning, and later, in the middle of the century, the microscope of which Wren himself was one of the earliest users. The outstanding progress was of course in astronomy and anatomy, the two sciences which had a real tradition of observed data behind them and to which these last instruments were able to contribute, but it is also the period when, from a general amalgam of scientific knowledge, the separate sciences were beginning to emerge in recognisable form. The process was only in its infancy, as compared with the extreme specialisation of our own day, and in many ways Wren seems nearer to Leonardo da Vinci in the multiplicity

of his interests than to the modern man of science, who confines himself so strictly to the cultivation of his own garden. An aspect of this variety of scientific interest is the readiness to welcome all sorts of information, and to hazard opinions on all sorts of subjects. We are constantly being amazed at the credulity of Pepys for example, but credulity is often the consciousness of an expanding world, and the men of the seventeenth century were at once too eager to know, and too conscious of the amount there was to be known, to be fastidious about stories that later generations have learnt to despise. The following titbits of information passed on to Aubrey by Wren himself will serve to illustrate both the credulity and its limits : " Strawberries have a most delicious taste, and are so innocent that a woman in childbed, or one in a feaver, may safely eat them : but I have heard Sir Christopher Wren affirm that if one that has a wound in his head eates them, they are mortall. Methinks 'tis very strange." And on the subject of the mysterious drummings or knockings at the house of Mr. Mompesson at Tydworth, one of the most famous seventeenth-century ghost stories : " Another time Sir Christopher Wren lay there. He could see no strange things, but sometimes he should heare a drumming, as one may drum with ones hand upon wainscot ; but he observed that this drumming was only when a certain maidservant was in the next room : the partitions of the rooms are by borden-brasse as we call it. But all these [includes other investigators] remarked that the Devil kept no very unreasonable houres : it

seldome knock't after 12 at night, or before 6 in the morning." Perhaps the outstanding quality of Wren's mind was its immense fecundity and readiness of invention ; it was his good fortune to turn to science when those qualities were most needed, and to turn to architecture in circumstances where those qualities more than any others enabled him to excel.

The University of Oxford in the 1650's, when Wren was an undergraduate and young don (1649-1660), was in a very curious state. The presence of the Court and the headquarters of the Royalist armies in the Civil War, the fortifications, the siege, the surrender, the consequent Parliamentary occupation, had all borne hardly on the university, and Anthony Wood speaks of it in 1646 as "empty as to scholars, but pretty well replenish'd with parliamentarian soldiers. Many of the inhabitants had gained great store of wealth from the Court and Royalists that had for several years continued among them ; but as for the yong men of the city and university he found many of them to have been debauch'd by bearing armes and doing the duties belonging to soldiers, as watching, warding, and sitting in tipling houses for whole nights together." During the following three years, things were straightening themselves out, and the Revolutionary leaders, in spite of much denunciation of the universities by some of their left-wing supporters, dealt honestly if ruthlessly by it. They were seriously determined to preserve it as a place of learning, and in many instances where they intruded new men in place of heads of colleges, dons and university

Officials they chose them wisely. There were of course scenes that must have been distressing to many, when Lord Pembroke, the Chancellor, went from college to college, "with a noisy rabble following behind," turning out the former dignitaries and establishing the new ones. But by the time Wren came on the books of Wadham (1649) these things were a year old. The new men had settled into their offices, and the benefit that the university was to gain by the presence of such men as Owen (lately Cromwell's chaplain) and Connant as administrators and divines, and the even greater benefits from the introduction of such figures as Wilkins, the new Warden of Wadham, Seth Ward and Wallis, were soon to become appreciable.

It was among these new intruded men that Wren was to make some of his most formative friendships. Wilkins, the warden of his college, was indeed Oxford born and bred, but Seth Ward and Wallis were both intruders. With these men he had probably established connections before he came into residence, perhaps through Scarborough, and possibly it was their presence there that determined his choice of a college. Wilkins, as warden of the college, had a spacious set of rooms along the front on the first floor, one of which, that over the gate with the oriel window, he gave over to Seth Ward and his young pupil, and it was known for long afterwards as the astronomy chamber. Wallis, who with Seth Ward is the next great influence on Wren after Scarborough, was not of his college, but must have been very much at home there in Wilkins's

time, and if Ward was to pass on his astronomy professorship eventually to his young pupil, it was with Wallis, as we have already said, that Wren accomplished his most lasting scientific work. Through Wallis also there is a link between Wren's scientific and architectural careers, for in 1650 the new Professor of Geometry had a large-scale model made of his "geometrical flat floor," a demonstration of his solution of the problem of how to support a floor the area of which is wider than the length of the timbers available for joists. Wilkins had another model made for himself the following year, and, in 1652 and 1653, Wallis himself lectured upon it. Wren, in his first large building, the Sheldonian Theatre, Oxford, adapted Wallis's floor to use on a monumental scale.

Wren graduated B.A. in March 1651, and M.A. in 1653, in which year he was elected to a fellowship at All Souls. Of this part of his career we know only that he was working on his tract on the planet Saturn, and possibly doing his first work with the microscope. Of his social activities at this time (or indeed any other) we have very little evidence; we know that he took the part of Neanias in a production of a translation of the *Plutus* of Aristophanes, probably given before the Prince Palatine some time about 1651, and that he joined with others in writing poems prefixed to the account of how an Oxford servant-girl, who had been hanged for murdering her illegitimate child, was revived by the medical students to whom the body had been sold for dissection. This is one of the few copies of verses

by Wren that we have, but a letter of Thomas Sprat refers to a verse translation of Horace's epistle to Lollius in very laudatory terms, but then Sprat's partiality towards Wren is obvious in all their dealings, and his recommendation is hardly fair testimony of quality. For the rest of our picture of Wren's early life at Oxford we must fill out from our knowledge of his friends and from Anthony Wood as best we may. In the first place, Wren was in rather a special position as an undergraduate by reason of his close family connections with academic life. Moreover, he was a gentleman commoner; that is to say he dined with the Fellows of the college, not with the undergraduates (unless there were enough gentlemen commoners to have a table to themselves), and enjoyed other special privileges. All this must have kept him a little apart from undergraduate society, and there were then no organised games or undergraduate clubs to help the mixing process. The ordinary undergraduate relaxations seem to have been picnics – Wood goes fishing and nutting in Shotover Wood – and various kinds of rowdy frolics and ragging at degree ceremonies, and so on. There was also a good deal of fighting, sometimes as the result of informal football matches. From what we know of Wren's character, and especially bearing in mind his extreme precocity, it seems unlikely that he indulged much in the last of these amusements.

According to Wood, coffee-houses were first set up in Oxford in 1650, but the fashion soon caught on and became an important feature of university life, being in fact embryo clubs. Among the

"wits" who frequented the coffee-house of Tillyard, "apothecary and great Royalist," Wood mentions Christopher Wren and his cousins Thomas and Matthew.

Thomas was a physician and fond of music, and Matthew, whom we shall meet again in political employment, was interested in political philosophy and wrote several works on it.

The most important of the social gatherings that Wren is known to have attended were those held first at Dr. Petty's lodgings (over a chemist's), later at Dr. Wilkins's at Wadham, and later again, after Wilkins's departure to Cambridge, at Robert Boyle's lodgings in the High Street, where he had established a laboratory. They had begun in 1649, being a continuation of earlier meetings in Dr. Goddard's rooms in London as far back as 1645. The meetings were held weekly, and among the first mentioned as attending them are Wilkins, Seth Ward, Ralph Bathurst, Dr. Petty, Dr. Willis, Lawrence Rooke, and, at an early date after the removal to Oxford, Christopher Wren and his cousin Matthew. This "experimental philosophical clubbe" was the beginning of the Royal Society, and may be considered the most important thing that happened at Oxford in the seventeenth century; certainly the most important factor in Wren's life there. Of its early members many were to become Wren's lifelong friends, and it was through these meetings that he made the acquaintance of Robert Hooke who had come up to Christ Church in 1653 and first came to the meetings about 1655. Hooke, who was three years younger than Wren, had been at

Westminster, and before that apprenticed to Sir Peter Lely with the idea of becoming a painter ; not long after he came to Oxford he became laboratory assistant to Dr. Willis, helping him in his chemical studies, and from him was passed on to Boyle, with whom he worked on the celebrated air pump. Hooke was destined to become the closest of all Wren's Oxford friends, working with him, not only in science, but later in architecture. It is almost certain that they were connected by marriage, for Hooke later refers to "cosin Wren-Hooke," presumably that sister of Christopher's who married John Hooke.

From the year 1654 we have two references to Wren in the Diary of John Evelyn, who visited Oxford in the course of a tour to the West Country. On July 11 he notes : "After dinner I visited that miracle of a youth, Mr. Christopher Wren, nephew of the Bishop of Ely" ; and on the 13th of the same month : "We all dined at that most obliging and universally curious Dr. Wilkins's at Wadham College . . . he had, about in his lodgings and gallery, variety of shadows, dials, perspectives, and many other artificial, mathematical, and magical curiosities, a way wiser (i.e. an instrument for measuring distances travelled), a thermometer, a monstrous magnet, conic and other sections, a balance on a demi-circle ; most of them of his own and that prodigious young scholar Mr. Christopher Wren : who presented me with a piece of white marble stained with a lively red, very deep, as beautiful as if it had been natural." It is easy to deduce from this Wren's Oxford reputation. Evelyn in

these passages initiates that chorus of superlatives in describing Wren which is interesting and important as coming from his contemporaries, but has exercised an unfortunate influence on his biographers.

An amusing anecdote appears in *Parentalia* which tells of a meeting of Wren and Oliver Cromwell at the house of Lady Claypole, the Protector's favourite daughter. Wren's presence there can be attributed to Wilkins, who had married into the Cromwell family, and to Claypole's known interest in mathematics. In the course of dinner the Protector addressed Wren as follows: "Your uncle," said he, "has long been confined in the Tower." "He has so, sir, but bears his afflictions with great patience and resignation." "He may come out if he will." "Will Your Highness permit me to tell him this from your own mouth?" "Yes, you may." The young Wren hurried off as soon as he decently could to the Tower to tell his good news to his uncle, only to receive a snubbing for his pains, being informed that "this was not the first time he [the Bishop] had received the like intimation from that miscreant, but disdained the terms projected for his enlargement which were to be a mean acknowledgement of his favour, and an abject submission to his detestable tyranny."

For the late 1650's and early 1660's we have a considerable mass of information about Wren's scientific work. To the year 1656 belong the experiments in the injection of fluids into the veins of dogs, and an exchange of mathematical

pleasantries with the French men of science. About these there is a little mystery. Pascal challenged the English mathematicians to solve a certain problem : this Wren apparently did, or rather provided two geometrical solutions from which the answer could be derived, and returned the challenge by propounding a problem that had been proposed by Kepler. It is suggested that this was by way of irony as implying that the solution of the original challenge was implicit in Kepler and the French ought to have known it. In the next year (1657) Wren received his first important public appointment, as Professor of Astronomy at Gresham College, London, in succession to Lawrence Rooke who was translated to the Chair of Geometry in the same place. Gresham College was founded at the end of the sixteenth century and consisted of an endowment for Professors of Divinity, Astronomy, Geometry, Music, Law, Physic and Rhetoric, and a building containing quarters for the professors, lecture-rooms, laboratories and an observatory. It seems to have become about this time a close corporation of men of science, for, odd though it sounds, both the Professors of Music and Rhetoric, Dr. Petty and Dr. Crowne, were primarily physicians, though Dr. Petty had so many other administrative interests, especially in Ireland, that he can have been little in London. Wren must have found himself among friends, for of the six other professors four are associated with him in the beginnings of the Royal Society. Gresham College was under the authority of the City of London, and Wren's Inaugural Lecture bears

evidence of his desire to appeal to an audience in part composed of City fathers, in its references to astronomical explanations of scriptural difficulties, and to navigation and sea-borne trade and the greatness of the commercial city. Navigation was a subject to which the Astronomy Professor had to pay particular attention by the terms of the foundation statutes of the college. It is a pity these formal compliments to the authorities should have survived, and not his Wednesday lectures on the astronomy of Kepler, delivered in Latin in the morning and in English in the afternoon. There are two passages from the Inaugural Lecture that deserve quotation. One because, as a modern astronomer has said, it is so strangely before its time that we are left wondering what was in Wren's mind: "[Future ages] may find the Galaxy [of stars] to be myriads of them, and every nebulous star appearing as if it were the Firmament of some other World – hang'd in the vast abyss of intermundious vaccuum." The other as an admirable summing up of the scientific point of view of his time: "Mathematical Demonstrations being built upon the impregnable foundations of Geometry and Arithmetick, are the only Truths, that can sink into the Mind of Man, void of all Uncertainty; and all other Discourses participate more or less of Truth, according as Their Subjects are more or less capable of Mathematical Demonstration."

It would seem from Sprat that Wren's appointment to Gresham College had an effect upon the meetings of the "experimentall philosophicall Clubbe," for he says: "About 1658 . . . being

call'd away to several parts of the nation, and the greatest number of them coming to London, they usually met at Gresham College, at the Wednesdays and Thursdays lectures of Dr. Wren and Mr. Rooke, where there joyn'd with them several eminent persons of their common acquaintance, the Lord Viscount Brouncker, the now Lord Brereton, Sir Paul Neile, Mr. John Evelyn, Mr. Henshaw, Mr. Slingsby, Dr. Timothy Clark, Dr. Ent, Mr. Ball, Mr. Hill, Dr. Crone, and divers other Gentlemen whose inclinations lay the same way. This custom was observ'd once, if not twice a week in term time till they were scattered by the miserable distractions of that fatal year ; till the continuance of their meetings there might have made them run the hazard of the fate of Archimedes, for then the place of their meetings was made a quarter for soldiers." Two letters from his friend Sprat and his cousin Matthew show that this was in the confusion following the death of Oliver Cromwell, and give a lively picture of the desolation of the college under military occupation.

In the year of his appointment to Gresham College Wren had been experimenting with his barometer, and in the year following (1658) he communicated his tracts on the cycloid to Wallis, who did not publish them till later. In 1659 we find him again at Oxford attending the classes in chemistry held by Peter Sthael at the suggestion of Boyle. Wood describes Sthael as "the noted chemist and Rosicrucian, Peter Sthael of Strassburgh in Royal Prussia, a Lutheran, a great hater of women, and a very useful man." Wood

himself attended the classes a few years later, but enumerates the original class, amongst whom, besides Wren, were Wallis, Millington, Bathurst, Lower, and John Locke (the philosopher) ; the last-named, says Wood "a man of turbulent spirit, clamourous and never contented. The club wrote and took notes from the Mouth of their Master, who sat at the upper end of a Table ; but the said J. Locke scorned to do it : so that while every man besides at the club were writing, he would be prating and troublesome." Some time in 1659, however, Gresham College must have renewed its sessions, as we have a note that Wren lectured there on light and refraction.

The Restoration of Charles II in May of 1660 was at first a relief after the alarms and excursions of the last two years, though it shortly became a full-blooded reaction. For the Wren family it was, of course, a great stroke of fortune. The Bishop was released and returned in triumph to Ely, and Cousin Matthew became secretary to the new Lord Chancellor, Hyde, now Lord Clarendon. As for Christopher, he duly returned to the new Dean of Windsor the records of the Order of the Garter, that had been in his keeping since his father's death at Bletchington in 1656, and continued his work at Gresham College. Moreover, "November 28th of that year [1660] there being then present at his lecture, William Lord Brouncker, Mr. Boyle, Mr. Bruce, Sir Robert Moray, Sir Paul Neile, Dr. Wilkins, Dr. Goddard, Dr. Petty, Mr. William Balle, Mr. Rooke, Mr. Wren, and Mr. Hill, they withdrew afterwards to Mr. Rooke's apartment where they

agreed to form themselves into a Society, and to continue their weekly meetings on Wednesdays at three o'clock, at Mr. Rooke's chambers in the Temple and at other times at Mr. Balles in the Temple." After Wren's next lecture, on December 5, Sir Robert Moray, one of the foremost of Charles's advisers on Scotch affairs, brought the news of the King's personal interest in the new society, and on March 6, 1661, it became the Royal Society by charter. *Parentalia* contains a draft preamble for the charter composed by Christopher Wren, who from the first had been most active in working for it. By this time, however, he himself had received academic promotion. On the retirement of Seth Ward he was elected to succeed him as Savilian Professor of Astronomy at Oxford, taking up his duties in May 1661. Later in the year he became D.C.L. at Oxford and a similar degree was conferred on him at Cambridge.

During these early years of the Restoration we have ample evidence of Wren's scientific activities. In 1660 he was ordered by the Society to prepare, against the next meeting, for an experiment with the pendulum, the first work of the new body, and to this year belongs the geometrical demonstration of solar eclipses already mentioned. In 1661 he was busy on the eclipses of Jupiter's satellites, and a committee on the production of lenses, and he suggested the use of blacklead as a lubricant for watches ; but more important than these, by royal command conveyed by Sir Robert Moray, he was required to make a series of microscopic drawings of insects for the royal

collection and also a large-scale globe of the moon, "representing not only the spots and various degrees of whiteness upon the surface, but the hills, eminences and cavities moulded in solid work. The globe thus fashioned into a true model of the moon, as you turn it to the light, represents all the Monthly phases, with the variety of appearances that happen from the shadows of the mountains and valleys." The globe was duly constructed, and set up on a fine turned stand of *lignum vitæ* with a scale and a complimentary inscription.

During the latter part of 1661, the whole of 1662, and the first half of 1663, we must suppose Wren as resident in Oxford but making occasional visits to London for meetings of the Royal Society. The list of his works in the Lansdowne MSS. gives 1662 as the date of his Oxford lectures on spheres, on Pascal, and on navigation. The globe of the moon was occupying some of his time, and we know of other scientific work of this period. Willis's *Cerebri Anatome* was published in 1664, for which he had drawn the illustrations, though at what date we do not know. In June of 1663 we have a picture of him at Oxford in Monconys's *Voyage d'Angleterre*, published in 1666. Monconys says: "Besides the College [i.e. All Souls], which I went to see, as I did all the others out of curiosity, I went there even more to see M. Renes [*sic*] the great Mathematician, though a slight little man, but at the same time one of the most civil and frank that I have met in England: for though he was unwilling that his ideas should be made publicke he did not hesitate

to tell me most freely of his weather-clock," etc., and there follows a descriptive list of apparatus of Wren's devising, most of which is familiar from other sources.

CHAPTER II

The Sheldonian Theatre – the profession of architecture in the seventeenth century – the visit to Paris – the first St. Paul's scheme – the Fire of London and the rebuilding of the City – contemporary architects – appointment as Royal Surveyor – the Office of Works – Sir John Denham – Hugh May – Wren's first marriage.

IN these first years of the Restoration, while Wren was resident in Oxford, Archbishop Sheldon decided to present to the university a new building in which the university ceremonies might be conducted, especially the "Act," as it was called, when the M.A. degree was conferred with much ceremony including speeches. Formerly, the ceremonies, with all their attendant undergraduate levity, had been held in the University Church. Wren was asked to make a design. This was in 1662, for a model was finished and shown by him to the Royal Society by April 1663. About the same time Bishop Wren presented a new chapel to Pembroke College, Cambridge, the foundation-stone of which was laid in May 1663. We have no documentary evidence that Wren designed it, though the association of the Wren family with the building, and certain detail resemblances to the Sheldonian Theatre, make it more than probable. There is, however, one point worth mentioning: *Parentalia* omits this chapel from the list of his works at Cambridge and only refers to it in connection with Bishop Wren. It is indeed a relatively small

and unambitious though delightful building, and, though it is almost certainly Wren's first executed work, it has not for a student the importance of the Oxford work. This was a grand affair and appealed to the imagination of Wren's time in quite a remarkable degree. To understand this appeal it should be borne in mind that it is a building of considerable size, measuring internally eighty feet by seventy feet, and is with Inigo Jones's Banqueting Hall, Whitehall, and his church of St. Paul's, Covent Garden, one of the largest buildings of the class that includes churches and public halls – all buildings, that is, where a single internal space is the chief element of the design, as contrasted with multiple-space buildings (e.g. houses, palaces, offices, etc., with many rooms or spaces) – that had been erected since the introduction of fully developed Italian architecture fifty years before. More than this, the design appealed most happily to both the ruling intellectual fashions of the day, the interest in and admiration for Roman antiquity, and, even more important, the enthusiasm for all things scientific and intellectually ingenious. The design was based on Sebastian Serlio's account of the antique theatre of Marcellus at Rome. Serlio, an Italian architect of the mid-sixteenth century, was the most important architectural writer available to Wren in an English translation. The plan of the theatre of Marcellus, as of all Roman theatres, was a D with the seats for the audience ranged round the inside of the curve, the actors ranged along the straight side facing them. The whole, in Roman examples, was unroofed and covered with a flat

awning of canvas. Wren, wishing to get the same internal effect in a roofed building, devised an ingenious timber truss which enabled him to span the great space with a flat ceiling, without any columns or piers to support it between the outside walls. This truss was Wren's variant solution of the problem of Wallis's geometrical flat floor that had been engaging the attention of his teachers when he first came to Oxford, and it was this that excited the admiration of the men of science and is the reason why the model of the building was exhibited to the Royal Society. The reference to the awning over a Roman theatre was enforced by the painting on the ceiling which represented the cordage and canvas of an awning drawn aside to admit of a view of allegorical figures, executed with all that display of perspective and fore-shortening, the mathematical aspect of painting, that the age delighted in. There were also original ingenuities in the construction of the attic windows and the semi-circular ventilators of the main storey, which are noted with admiration by contemporaries.

The Sheldonian Theatre has not received from modern writers on Wren the attention it deserves ; we are blasé about spans of seventy feet now made easy by modern materials ; the external proportions of the buildings are not altogether happy and, moreover, have not been improved by the nineteenth-century restoration. But the seventeenth-century critics regarded it as one of the most important of his buildings, and in the eighteenth-century *Parentalia* it occupies a foremost place in the list of his works. The defects of the exterior

are not confined to those of the major proportions : there is a very natural clumsiness in the handling of the Classic *motifs* of the façade as well as in the treatment of the rounded sides. Wren's was one of the greatest minds that ever turned to architecture, but even he could not master the technique of Baroque composition at one stroke, and in detail he succeeded far better with the simpler design problems of the Pembroke Chapel façade. There is an entry in Evelyn's Diary, which gives a description of the opening of the Sheldonian when Evelyn was extremely shocked by the jokes of the semi-official University Buffoon. It was partly the activity of this functionary that had prompted Sheldon to provide new quarters for the "Act."

Though Pembroke Chapel and the Sheldonian are Wren's first executed buildings, it seems probable that the authorities had consulted him on questions of constructional engineering as early as 1661. *Parentalia* refers to the offer of an appointment to "Survey and direct the works of the Mole, Harbour and Fortifications of the Citadel and Town of Tangier," which had come into English possession as part of the dowry of Queen Catherine of Braganza. The offer was made through Cousin Matthew, the Lord Chancellor's secretary, and suggested that, in addition to an ample salary, Wren would be granted special leave from the university and, further, offered the reversion of the office of Surveyor-General of the Royal Works; that is, the promise that on the death of Sir John Denham, the then Surveyor, Wren should succeed him. The offer was

declined, in the words of *Parentalia*, " [being not then consistent with his health] but [he] humbly prayed his Majesty to allow of his excuse and to command his duty in England." We are not certain of the date of this offer, but a letter by Sprat from Oxford, telling how Dr. Bayly, the Vice-Chancellor, had complained of Wren's absence from his professorial duties, refers to Tangier and to the repairing of St. Paul's as occupying Wren's time and keeping him in London, and must date from 1661, the last year in which Dr. Bayly was Vice-Chancellor. September 1661 is also the date of the fitting out of the naval expedition to take over Tangier. It is probable that these employments are the foundation of the persistent tradition that Wren was appointed deputy surveyor for Sir John Denham as early as 1661, for which there is otherwise no evidence at all.

Both the Tangier appointment and St. Paul's, being specially matters of constructional engineering, make it easier to understand how Wren slipped into architecture from pure science in a way that seems curious to our modern ideas of what an architect should be. Wren, with his skill as a draughtsman – witness his anatomical drawings for Willis's book – his mathematical attainments, and mechanical ingenuity, would appear to the seventeenth century as peculiarly adapted to the profession of architecture, given a reasonable business administrative ability and an interest in the art. That Wren should have cared to interest himself in architecture may seem remarkable to a generation that

tends to regard a man of science as of a superior order of creation to such a thing as an architect, but to the seventeenth century, and indeed to the sixteenth and even the fifteenth century in Italy, architecture was a learned pursuit and, moreover, one not unallied to science. The Italian type of architecture that Inigo Jones had introduced into England was distinguished from the rule of thumb building tradition by the system of design – the very word is used first in English in Jones's time – worked out in rules and principles which seemed to the men of those times to be the reduction of a visual art to order and natural laws. It seemed to promise that art also, which we associate with the ideas of romance, inspiration and arbitrary taste, could be brought completely within the power of reason. Even the, to us, dreary mathematical game of linear perspective seemed to them another instalment of the conquest of art by mathematical reason. These considerations gave to architecture a very different intellectual standing from that which it enjoys to-day.

In 1665, Wren got his next job as an architect to design a block of students' rooms for Trinity College, Oxford. Some drawings of this building are extant, though the block itself has been altered and added to out of all recognition. The drawings show a pleasant, fairly simple, well-planned block with well-spaced windows and good general proportions, but is chiefly remarkable for the form of its roof, a French double sloped roof or Mansard, which is the more interesting in view of the persistent French influence on Wren's work

throughout his career. In this instance it must have come through picture-books, but in a letter about this building written to Dr. Bathurst, the president of the college, we get a reference to a visit to France, the only occasion, as far as we know, that Wren left England.

From the letter it appears that some work was to go forward in Wren's absence, in which case a good deal of reliance must have been placed in Minchin, the builder, though this would be quite in accordance with the customs of the time. It is interesting to note that Minchin came from Bletchington. This is not the first reference we have to the French visit, for in a letter of Evelyn's to Wren, asking him to recommend a man to be a tutor for his son, and written in April 1665, he mentions that Sir John Denham, the Royal Surveyor, had told him of Wren's intended journey. The letter to Bathurst mentions Mansard and Bernini, and the absence of any reference to the French men of science he might hope to meet may perhaps be taken as a sign of Wren's changing interests. Bernini was the greatest name in architecture and sculpture of his age ; he had ten years before completed the great piazza before St. Peter's in Rome, and François Mansard's work at Maisons and his Parisian churches are perhaps the finest Renaissance buildings in France. For an architect it was just the right moment to visit Paris where the whole artistic world was humming with architectural activity and gossip. Louis XIV had decided to embark on the completion of the Palace of the Louvre ; he had obtained designs

from Rainaldi and Cortona, Bernini's most important contemporaries in Rome, all the French architects were producing schemes, and Bernini himself had arrived in Paris by special invitation at the end of May. Besides all this, great works were already in progress, mainly by Le Vau, an architect only inferior to Mansard in distinction and certainly more successful in retaining Court favour.

The French visit is described in a letter from Wren to his friend Dr. Bateman, probably the Fellow of Merton College of that name, which is given in extracts in the *Parentalia*. In it Wren describes the intense activity in all departments of art in the Paris of the time, especially remarking the personal supervision of the great Colbert who "comes to the works of the Louvre every Wednesday and, if business hinders not, Thursday." And the regularity of the workmen's pay-day, a sore point in Wren's later career. He passes not altogether favourable comments on Le Vau's Collège des Quatre Nations and the earlier building at Versailles, and gives a list of the buildings he visited, adding also, "Mons. Abbé Charles introduced me to the acquaintance of Bernini who showed me his designs of the Louvre and of the King's statue." Adding again later in the letter: "I shall bring you almost all *France* in Paper, which I found by some or other ready design'd to my Hand, in which I have spent both Labour and some Money. *Bernini's* Design of the *Louvre* I would have given my Skin for, but the old reserv'd *Italian* gave me but a few Minutes View; it was

five little Designs in Paper, for which he hath receiv'd as many thousand Pistoles ; I had only Time to copy it in my Fancy and Memory ; I shall be able by Discourse, and a Crayon, to give you a tolerable Account of it. I have purchas'd a great deal of *Tailledouce*, that I might give our *Country-men* Examples of Ornaments and Grotesks, in which the *Italians* themselves confess the *French* to excel. I hope I shall give you a very good Account of all the best Artists of *France* ; my Business now is to pry into Trades and Arts, I put myself into all Shapes to humour them ; 'tis a Comedy to me, and tho' sometimes expenceful, I am loth yet to leave it."

There are various curious points about this letter, but perhaps the most striking is that all the buildings mentioned in it are, with one exception, palaces, châteaux or great garden schemes. Presumably before the Fire of London the chances of doing much in the way of church architecture would seem remote to Wren, but still his interest was already, to some degree, engaged at St. Paul's and the omission is surprising. He does not confine himself to very recent buildings, and some of those mentioned, as Ecouen and Chantilly, date back to the end of the sixteenth century and the first introduction of developed Renaissance architecture into France. That he saw and studied the great domed churches of the early and middle seventeenth century is certain from the evidence of his own work. They were in fact the only domed buildings that Wren can ever have seen except his own. But the things that interested him most seem to have

been the Louvre works, and of those he seems to have been as much impressed by the organisation and the technical engineering problems of moving great stones as by the actual designs or his interview with Bernini. This is apparent from his references in his later report on St. Paul's. Of the personalities mentioned in the letter, the most interesting Abbé Charles who introduced Wren to Bernini defies identification.

Parentalia says that in the early part of the letter the recipient is thanked for an introduction to Lord St. Albans, famous as the devoted friend of Queen Henrietta-Maria and perhaps the most important go-between of the English and French Courts. A better introduction could hardly have been desired. Lord St. Albans had himself a considerable interest in architecture and was the chief promoter of the development of St. James's Square and the adjacent areas, in which Jermyn Street preserves his name. From Boyle we learn that Wren got back to London towards the end of February.

After his return from Paris, Wren busied himself with a report on the renovation of St. Paul's, which he presented to the King, together with drawings illustrating his proposals on May 1. The report and some of the drawings, rather elaborate finished affairs as befitted drawings prepared for His Majesty, are still extant. Briefly, the scheme was to complete the restoration of the nave and transepts, begun by Inigo Jones who had refaced them externally and added the great portico at the west. Wren now proposed to reface the interior, using a great order of

Corinthian pilasters embracing both the arcade and triforium arches, and to replace the mediæval vault with a new brick one consisting of a series of shallow saucer domes above a series of rather small clerestory windows. The vault scheme was not unlike the one eventually carried out in the new church. But the most revolutionary proposal in the report was the substitution of a dome at the crossing of nave, choir and transepts for the celebrated great central tower. This dome was much taller in proportion to its internal width than the one we know, and would presumably have produced on a spectator at floor level rather the effect of being at the bottom of a well. It was to consist of an inner dome and lantern of stone or brick, and an outer one of timber springing from about one third way up the curve of the inner. By this means Wren was able to get a total external height of some 360 feet. The whole scheme of the dome seems to be based on the dome of the Church of the Sorbonne in Paris, begun by Lemercier in 1635, but Wren had also derived some features from the pictures of Bramante's design for the dome of St. Peter's as published in Serlio's book. The great external height of the dome and lantern was no doubt occasioned by the celebrity of the old central tower as a landmark to Londoners : indeed, in his report, Wren suggests that the new dome should be built round and outside the old tower, "partly because the expectations of persons are to be kept up ; for many unbelievers would bewail the loss of old Paul's steeple, and despond if they did not see a hopeful successor rise in its

stead," but chiefly as a means of economising scaffolding in the new operations. And Evelyn gives an account of how a committee visited the church in August and supported Wren against the majority of expert opinion as to the necessity of replacing the central tower.

Within a week of this meeting the Fire of London broke out, and on the second day of the Fire "the stones of Pauls flew like grenadoes, the melting lead running down the streets in a stream," and on the 7th of September, Evelyn notes: "At my return I was infinitely concerned to find that goodly Church, St. Paul's, now a sad ruin, and that beautiful portico (for structure comparable to any in Europe, as not long before repaired by the late King) now rent in pieces, flakes of vast stone split asunder, and nothing remaining entire but the inscription in the architrave, showing by whom it was built, which had not one letter of it defaced. It was astonishing to see what immense stones the heat had in a manner calcined, so that all the ornaments, columns, friezes, capitals, and projectures of massy Portland stone, flew off, even to the very roof, where a sheet of lead covering a great space (no less than six acres by measure) was totally melted. The ruins of the vaulted roof falling, broke into St. Faith's [i.e. the crypt], which being filled with the magazines of books belonging to the Stationers, and carried thither for safety, they were all consumed, burning for a week following."

Within a few days of the disaster, Wren presented to the King a scheme for laying out a new

city. His was the first of several such, his friends Evelyn and Hooke producing them among others. The practical importance of these plans can easily be exaggerated. They are all rather in the nature of ideal cities. The urgency of the situation, the need of rehousing the tens of thousands of homeless people, and of doing something at once to mitigate the dislocation of all business, made it impossible to contemplate the delays entailed in laying out a complete new system of streets regardless of the existing foundations, water conduits and drains, as well as the legal complications of the adjustment of the new site values to existing property rights. An absolute monarch might have overcome some of these difficulties, but the City of London was the least amenable of all Charles's domains to arbitrary treatment by the central government. All these schemes are interesting as expressions of the town-planning ideals of the time, and Wren's plan, which is by far the most ingenious and imaginative, is a *tour de force*, considering that it was produced in about four days, but its practical possibilities in the circumstances of the moment were negligible. Even the quay or embankment from London Bridge to Blackfriars Bridge, the idea of which was common to both Wren and Evelyn, though it was made part of the London Buildings Acts and pressed by the Crown and seems to have got some way to accomplishment, failed to materialise completely. One result, however, may perhaps be attributed to Wren's promptitude in presenting his plan to the King ; he was appointed with

Roger Pratt and Hugh May as one of the representatives of the Government to treat with the City authorities with regard to the rebuilding. It would seem probable that it is to these men that we owe the framing of the Building Acts and other regulations which not only governed the rebuilding of the City, but served as a standard to builders and clients all over the country. In the Pratt MSS. is an account of the first work of these Commissioners: "His Majesty King Charles the 2nd was pleased out of his owne meere motion to appoint his Surveyour for ye present Mr. Hugh May, Doctor Renne, and myselfe to be his Commissioners to treat with such as the Citty should think fit to nominate about the more quick and orderly reedification of the Citty, who sente to us Mr. Milles their Surveyour and Mr. Hooke Professor of ye Mathematics in Gresham Colledge, and Mr. Germain an experienced man in buildings." This committee began work at the beginning of October, and "At our third meeting October the 11, upon the motion of some of the Lords of ye Council, who resolved to sitt to heare the progresse of our affaires every Tuesday in the afternoon, wee resolved the breadth of the several future streetes."

Wren must have been a busy man in those next few months, for we have evidence of his works for the Royal Society and we know him to have been a good deal in Oxford, presumably attending to the duties of his professorship. How arduous the duties of the Commissioners may have been after the first rush of work it is hard to tell, but

Hugh May is allowed to have a deputy at the Office of Works by reason of his "extraordinary business" in March 1667, and Pratt was knighted in July 1668, one may suppose in recognition of his services. It is possible that Pratt and May were at first the most active members of the Commission. Wren's eventual emergence as by far the most important of the three has obscured the whole matter. Undoubtedly at this time both the other men had more experience of actual building practice than he, and works to their credit of a size and in quality of design, if not in constructional ingenuity, at least the equal if not the superior of his. Moreover, May was an official of the Office of Works of some years' standing. The whole question of Wren's architectural rivals was to become acute in the course of the next three years, and we shall have to return to it when the time comes of Wren's appointment as Surveyor-General of the Works. By that time, however, Pratt was out of the running, for that fortunate man inherited an estate in Norfolk in 1667, married a rich wife in 1668, and in 1669, the year of Wren's appointment, began on his own property his last architectural work, a house for himself. It is possible that the fall of Clarendon, Pratt's patron, in August 1667 had some effect on his retirement from architectural practice, more especially as the great house he had built for the Minister had played an unfortunate part in the political attacks that caused his ruin. In any case Pratt's retirement removed an important rival from out of Wren's way, and one whom we know to have been interested in that branch of

architecture which Wren was to make especially his own, church-building. We know from a letter in the Pratt MSS. that hopes were entertained in certain quarters, about 1666, that he might be architect to St. Paul's, and with Clarendon's influence in all church affairs to back him he might indeed have had a good chance of the job. Amongst his papers there are notes on church design in relation to St. Paul's, and criticisms of some of Wren's schemes, dating from the early seventies, that show he still retained his interest in the problem after his retirement.

Of Wren's known architectural activities between the Fire and his appointment to the Office of Works in March 1669, the most important is Emmanuel College Chapel at Cambridge. The design dates from the end of 1666 or early the next year, to judge from the extant letters, and the work was put in hand early in 1668. Wren's buildings include, besides the actual chapel, wings flanking the chapel façade and forming an arcaded side to the court. The character of the design is still rather immature and has very definite signs of French influence in the management of the roofs of the wings. Another building of this time given in the most authoritative list of his works is the new Customs House in London. The list gives it under the date 1668, and there is mention of Wren's name in connection with it in the Treasury Papers of that year. It would seem that Wren was acting with the Office of Works in this matter, for Denham and May are the names which appear most often, and this may account for the persistent legend that Wren was

an official of the Works before March 1669. The building was burnt early in the eighteenth century, but we know that it was admired for the convenience of its planning, though, to judge from an engraving, the external effect, which was Dutch rather than French, shows an inability to handle the Renaissance apparatus of design that is quite consistent with Wren's authorship, bearing in mind the clumsiness of his other designs for large buildings in this early period.

Two other works of this time must be mentioned, Wren's report on Salisbury Cathedral (1668), drawn up for his friend Seth Ward now Bishop there, and his report on St. Paul's after the Fire. This last has a certain importance. It is clear from it that the effects of the Fire had made the old scheme quite impossible. The Gothic choir, where the vaults had fallen and crashed through into the crypt, was now in a worse state than the nave that had so concerned the Commissioners before the disaster. It is equally clear that the financial outlook did not warrant any very ambitious schemes for the present. Parliament had imposed a tax of one shilling per chaldron on coal coming into London in 1666, but the proceeds of this had to cover such a number of pressing jobs that there can have been little hope of St. Paul's getting much for a long time. The same applies to the rebuilding of the parish churches of the City, for the eventual rebuilding of which Wren seems to have been appointed architect as early as 1666. Most of the money allotted to the cathedral and the parish churches out of the tax must have been required for the

clearing of the ruins and the provision of temporary accommodation pending better times. Wren's report on St. Paul's is indeed mainly concerned with these two points, especially the question of the position of the temporary building within the ruins. His advice was apparently followed. In 1668 we have two letters to Wren at Oxford from Sancroft, the Dean of St. Paul's, a close friend to whose good offices he seems to have owed his employment at Emmanuel College. The first is mainly concerned with the state of the ruins and the difficulties they were having in patching up a temporary building. This is in April. The second letter, dated July 2, suggests that some attempt at beginning a new church should be made, part to be built as immediately necessary and to encourage contributions that might make possible the completion of the whole. On July 29 the King issued an order to the Commissioners to take down the eastern parts of the church and the tower, and to clear the way for a new choir, though the order enjoins that special care should be taken of the western parts of the church with a view to re-using the material in the new building. Both Sancroft's letters are urgent in their demand that Wren should return to London. One other curious little document survives from these years, quite unrelated to Wren's other activities. It is an engraved view, by Wenceslaus Hollar, of Windsor Castle from the north, dated 1667. It is an interesting and charming example of Wren as a landscape draughtsman and, as far as is known, the only one.

On March 5, 1669, the Surveyor-General of the Works, Sir John Denham, addressed a letter to Lord Arlington, the Secretary of State, as follows : " You will find that I have power to make my deputie during my life. And accordingly by the King's desire intimated to me by my Ld. Duke of Buckingham I have deputed this bearer Dr. Christopher Wren my sole deputie with a revocation of any verbal deputations (though I know of none) if Mr. May or any else pretend, it was without my knowledge or consent in the time of my sicknesse or absence." The grant was made next day and makes mention of Sir John's ill health. On March 19 he died and Wren succeeded to his office. This was great promotion, for to be Surveyor-General was the greatest official position to which an architect could aspire.

The Office of Works, of which Wren now became the head, had been re-established at the Restoration as consisting of the Surveyor and the Comptroller, the two great officers, the Patent Artisans, as the King's Master Mason, the King's Master Carpenter, the Sergeant Plumber, etc., the Paymaster, the Clerk Engrosser, who was required to have some knowledge of architecture, the Purveyor and four clerks of the works of which that of Whitehall was the most important. The business of the Office was first of all the care of the royal residences, and this included what may be compared to the duties of a borough surveyor in all those parts of London round about Westminster and St. James's that were royal property. The Office was also called upon for

innumerable jobs of varying importance, as the altering and fitting up of rooms, offices and lodgings in the government buildings which were all nominally part of the royal residences. These jobs varied from looking after detail repairs of offices to contriving and carrying out the adaptation of Staterooms as theatres for Court entertainments, and designing the mounting and *décor* of the operas and plays performed there. It also included the fitting up of places for great State functions, as Westminster Hall for a State trial or the Abbey for a coronation or royal funeral. Besides all this, any royal building undertakings on a grand scale were usually designed by the Surveyor or Comptroller and carried out by the Office. The whole organisation, the internal working of which is rather obscure, had been overhauled in 1662-3, when the salaries of the officers had been increased to reduce the temptation to perquisites and other unofficial sources of remuneration.

In Sir John Denham's time the chief officers had been an obscure Francis Weathered the Comptroller and Hugh May the Paymaster. May had succeeded to the Comptroller's position in July 1668. The situation had been complicated by the ill health of the Surveyor who suffered from an attack of temporary insanity in 1666, and by the pretensions of John Webb. These were well founded, for Webb, who had been trained under Inigo Jones, was certainly the best educated architect of the time in the modern sense and especially an expert in matters theatrical, in which his training under Jones, a great theatre

designer, gave him a great prestige. Webb enjoyed considerable Court patronage after the Restoration, being employed to design the new palace at Greenwich and to stage the grand production of *Mustapha* in a new theatre of his own contriving at Whitehall in 1666. Denham himself has suffered in reputation from his position coming between Inigo Jones and Wren. He was, however, a considerable poet, and there is every reason to believe that he was a perfectly competent official. The one work of architecture known to be by him, Old Burlington House, is not a particularly distinguished but perfectly creditable building typical of its time. His work was in the main administrative, and there was some evidence of his interest in town planning and street improvement.

Not unnaturally this elevation of Wren over the heads of Webb and May did not pass without protest. Among the State Papers is a most interesting document, unfortunately without a date, in which Webb recounts his services to the Crown since the Restoration, tells how Sir John Denham obstructed the grant of his reversion of the Surveyorship, and protests that he "cannot now act under Mr. Wren, who is by far his inferior, but if joined in the patent with him, will instruct him in the course of the Office of Works, of which he professes ignorance." This sounds odd in view of the astonishing achievements of Wren's career at the Office of Works, but at the time it was written was a perfectly reasonable plea. To a man like Webb, brought up strictly as an architect under Inigo Jones, Wren's extant

works in 1669 must have seemed very barbarous and uninstructed. As far as we know, nothing was done to compensate Webb for this disappointment. Presumably the Greenwich commission was considered enough. With Hugh May, things were rather different. On March 21, 1669, Pepys notes : " Met with Mr. May, who tells me the story of his being put by Sr John Denham's place, of Surveyor of the King's Works, who, it seems is lately dead, by the unkindness of the Duke of Buckingham, who hath brought in Dr. Wren : though, he tells me, he hath been his servant for twenty years together, in all his wants and dangers, saving him from want of bread by his care and management, and with a promise of having his help in his advancement, and an engagement under his hand for £1,000, not yet paid, and yet the Duke of Buckingham is so ungrateful as to put him by : which is an ill thing, though Dr. Wren is a worthy man. But he tells me the King is kind to him, and hath promised him a pension of £300 a year out of the Works ; which will be of more content to him than the place, which under their present wants of money is a place that disobliges most people, being not able to do what they desire to their lodgings." And three days later is the document in the State Papers confirming the extra £300 a year " as a mark of the King's gracious acceptance of his services." As May had been promoted Comptroller in the July before, he was ultimately very well placed ; but as if this were not enough, in the following year (1670) he was given two more jobs, one of which, the Inspectorship of

French and English Gardeners at Whitehall, St. James's and Hampton Court, carried a salary of £200. The comedy of Hugh May's compensations does not end here, for on November 30, 1673, just eighteen days after the issue of letters patent authorising the Commissioners to proceed with a scheme of a new St. Paul's and nominating Wren as the architect, May was appointed architect for the large works of reconstruction at Windsor Castle. It would seem that someone had a very bad conscience about the appointment of Christopher Wren.

On December 7, 1669, Wren was married in the Temple Church to Faith Coghill, daughter of Sir Thomas Coghill of Bletchington. His wife was thirty-three when they married and it is to be supposed that they had known each other since childhood. Sir Thomas Coghill was the squire of Bletchington, and his house had been garrisoned during the Civil War and captured by Cromwell in 1645. We have one letter, dated June 14, but no year, written by Wren to his future wife, one of the few intimate personal documents of his that have survived.

“MADAM, — The artificer having never before mett with a drowned Watch, like an ignorant physician has been soe long about the cure that he hath made me very unquiet that your commands should be soe long deferred ; however, I have sent the watch at last and envie the felicity of it, that it should be soe neer your side, and soe often enjoy your eye, and be consulted by you how your Time shall passe

while you employ your hand in your excellent workes. But have a care of it, for I put such a spell into it that every Beating of the Ballance will tell you 'tis the pulse of my Heart which labours as much to serve you and more Trewly than the watch ; for the watch I believe will sometimes lie, and sometimes be idle and unwilling to goe, having received so much injury by being drenched in that briny bath, that I despair it should ever be a Trew servant to you more. But as for me (unless you drown me too in my teares) you may be confident I shall never cease to be

“ Your most affectionate, humble servant,

“ CHR. WREN.”

Wren had a house in Scotland Yard where the Office of Works was accommodated, and to which Denham had made additions, and there presumably Wren and his wife took up their residence.

No special mention has so far been made of Wren's scientific work during the years 1664-9. These years would seem to have been among his most active in that field, but the chronology of his communications to the Royal Society and his experiments is rather confused. It seems that Wren is often producing the results of long past work that he has set on one side, so that it is very hard to arrive at any orderly sequence in his scientific interests. Moreover, the publication of the *Philosophical Transactions* by the Society, which begins in 1664, encouraged such resurrections, and from a biographer's point of view almost

adds to the confusion. Certain work mentioned in the MS. list under 1669 may really be the publication of the results of work done as much as ten years earlier. Some points, however, stand out. There is extant a discourse to the Society, which would seem to date from 1664, outlining a programme of work and strongly advocating the use of the Society's organisation for the systematic collection of data, especially meteorological. The following year the Society set up committees for different sciences, Wren being nominated a member of three of them, Mechanics, Astronomy, and the General Committee, which seems to have covered the fields suggested in his discourse. About this time, i.e. just before his visit to Paris, he and Robert Hooke were working together on the determination of the paths of comets. Eventually Hooke published the results of their work with due acknowledgments to his friend. Another astronomical problem which was occupying him about 1667 was the measuring of the diameters of planets. In 1668-9 we have news of further work on the cycloid and on the laws of motion, when Wren was in touch with Huygens through the Society, and this latter work seems to have been his main preoccupation in the months immediately preceding his appointment as Surveyor-General of the Works.

Besides these major scientific interests, Wren, who had been elected to the Council of the Society in 1666, seems to have concerned himself with a number of minor problems of very various importance. The remarks of the editors of Robert Hooke's Diary on the nature of Hooke's

work for the Society apply in a considerable degree to Wren also : " His occupation almost forbade a systematic investigation of any one problem. He had to serve a group of men of widely varying interests, many of whom were merely dilettantes seeking amusement, all of whom had an insatiable curiosity in almost any and every aspect of natural phenomena. The early records of the Society's activities present a weird agglomeration of trivialities and discoveries which the attrition of subsequent investigation has shown to be of basic importance." Among these minor activities are his communication of the details of a new kind of lamp, of a level for taking the horizon of a circle, and one, in the form of a letter from Oxford, on the strangely diseased bones in a boy's head there. To these may be added a second edition of the lunar globe he had made for the King, and a communication on the form of grain elevators used at Danzig. Also, just after the Fire, when the Society had perforce left Gresham College, which had been taken over by the City authorities as temporary offices, he and Hooke were both concerned in the design of a proposed building for the Society on a site that was offered them by a rich and generous member. Nothing, however, seems to have come of this scheme, presumably for lack of money.

CHAPTER III

Periods of Wren's architectural career – Hooke's Diary – the City churches – secular buildings of the seventies – Trinity College Library, Cambridge – Charles's Mausoleum design – St. Paul's first model – St. Paul's second model – St. Paul's warrant design – Wren and Hooke – death of Lady Wren – Wren's second marriage – births of his children.

WITH his appointment as Surveyor-General, and, what is perhaps more important, the increase of the coal tax to 3s. per chaldron in 1670, Wren's architectural career develops so largely that it overshadows all his other activities ; and in 1673 he resigned his position as Savilian Professor at Oxford. It is possible to divide Wren's buildings into four periods ; the first, early one, before 1670, which has already been discussed. Then the second period, from 1670 to 1687 ; the third, from 1687 to 1700 ; and the last, after 1700. The justification for the break at 1687 is shown in the figures of the distribution of money derived from the coal tax. From 1670 to 1687, £88,468 14s. 3d. went to St. Paul's and £264,206 2s. 9d. to the City churches ; from 1687 to 1700, St. Paul's received £247,674 17s. 4d. and the City churches only £53,300. To the second period, then, belongs the bulk of the City church work, and after 1675 the beginnings at St. Paul's and the series of non-ecclesiastical buildings, as Trinity College Library, Cambridge (1676), Chelsea Hospital (1682), the palace at Winchester (1683), and the work at Whitehall for James II (1685). The

third period includes the main work at St. Paul's and much that is most important in the design, also Hampton Court and the beginnings at Greenwich Hospital. After 1700 the finishing of St. Paul's and the continuation of Greenwich are the main concerns.

The second period is the most interesting and important, for in its early years Wren was developing very rapidly from the inexperienced, rather amateurish designer of the first buildings to the great master of the mature designs. It would be difficult to exaggerate the part played by the City churches in this development. Wren is distinguished among architects, not only by his natural gifts and early distinction as a man of science, but also by the timing of his opportunities. It was a stroke of extraordinary good fortune that gave him the City churches to design just when he had finally devoted himself to architecture, and an even greater that the carrying out of the St. Paul's design was delayed until the experience on the City churches had been digested. For it was his work on the City churches that helped to develop that superb gift for space composition that distinguishes the completed St. Paul's, to mention only one of the many benefits he derived from it.

During a large part of this second period we have more direct knowledge of Wren's personal life than at any other time, from the Diary of Robert Hooke, which runs from 1672 to 1680. Hooke was acting throughout this time as Wren's assistant and receiving a salary from him, as he himself puts it, "on ye City Churches

account." In addition to this he was a close personal friend, dining with him frequently, going to coffee-houses with him even more frequently – Stukeley remarks that Wren and Hooke were notorious for the amount of coffee they drank – walking with him in the park and discussing all manner of scientific and general matters. It is a little difficult to be certain what Hooke's duties were in regard to the City churches. The statement in *Parentalia* that he was employed to survey the sites is almost certainly untrue as a description of his work, for there were other less distinguished men who were paid for that job at fixed rates. In the Diary, Hooke frequently mentions visits to the churches in course of construction, sometimes with Wren or the other assistant, Woodruffe, sometimes by himself. He certainly had a great deal to do with the contracts and agreements with the craftsmen, and sometimes, as at St. Stephen's, Walbrook, he passes the accounts instead of Wren, though more often he and Wren go through them together. During the period of the Diary, Hooke has also his work as City Surveyor and his own practice as an architect: building Bedlam Hospital (one of the largest undertakings of the time), Montagu House (on the site now occupied by the British Museum), a new building for the College of Physicians (including the celebrated demonstrating theatre), and several country and town houses. This is not an exhaustive list. With Wren, in a degree of collaboration it is difficult to determine, he designed the Monument in 1673. Besides Hooke, Wren had other assistants, as

Woodruffe and Oliver, whose names appear from time to time in the accounts.

The work on the City churches began with a rush. Seventeen were started in 1670 and within six years there were twenty-eight in hand. Considering his other duties, as Surveyor-General for example, it is not surprising that Wren required assistants, or that the work is less finished and of a lower standard on the whole than we find in his later buildings, especially St. Paul's. But another point must be made : it is not clear how far Wren was responsible for the interior finish and the fittings of the churches ; certainly the Vestries had a very considerable say in the matter, though equally certainly Wren was often consulted and could keep a general control over the appearance of his work. The churches vary very much in importance and ambition. Three stand out from among the first undertaken as especially noteworthy - St. Lawrence, Jewry ; St. Mary-le-Bow ; and St. Stephen's, Walbrook. All three were more costly and ambitious than the average, and the last two may well be considered the first works in which Wren showed the quality of his genius. Both these buildings are distinguished for the arrangement of their interior spaces. St. Stephen's is an extraordinarily subtle and ingenious combination of the dome with a rectangular plan, so that not only is a real effect of breadth of space given by the dome, but the interior is given a definite axis east to west. With St. Paul's it is the work of Wren that has had the greatest reputation with foreign critics. St. Mary-le-Bow is chiefly celebrated for its tower and spire design,

but the body of the church is also interesting. Hawksmoor, Wren's chief assistant in later life, says that the internal arrangement is derived from the Temple of Peace, a Roman building published by Serlio among others, on which Wren also based the relation of the order and arches at St. Paul's. At Bow Church the same system is employed for the order and arches, but the resemblances to the Temple of Peace go much further, for the arches open into three large barrel vaulted bays linked to each other by small connecting arches, and it is in this essential quality of the main arrangement of internal spaces that it derives from the Temple of Peace as well as in the treatment of the order. The tower, lantern, and spire of St. Mary-le-Bow are too complicated an arrangement of forms to be described here. The tower and steeple stand largely detached from the main body of the church facing on to the neighbouring main street, and on the ground level form part of an entrance vestibule to the church. In them the richness of Wren's invention displays itself to the greatest advantage. In succeeding years Wren produced an extraordinary number of fine tower and lantern or steeple designs ; his fecundity in this vein is one of the most striking qualities of his work as a whole, but, though many of the later examples are more accomplished than this, it would be hard to say that any is more successful. St. Mary-le-Bow was begun in 1670, the tower a year later, and St. Stephen's, Walbrook, in 1672.

The reference to Bow steeple raises the whole question of Wren's towers and spires. In general

these are later than the churches and some of the finest belong to the latter part of our third period and even to the fourth. Such are the lovely steeple of St. Vedast (1697) and the lantern of St. Magnus (1705), two of the finest things he ever achieved and belonging in time rather with the western towers of St. Paul's than with St. Mary-le-Bow. Other striking examples are St. Edmund the King, Christ Church, Newgate Street, and St. Bride's, for all of which we have evidence of a stage in their history or designs when the towers were not determined or were much inferior to those actually built. St. Edmund is the most remarkable example, for there the lead lantern is more than thirty years later than the body of the church and tower, and certainly by its addition raises the whole quality of the building.

It is usual to discuss the City churches mainly from the point of view of the variety of their planning, and certainly that is their most striking quality apart from the tower and spire designs. It is, moreover, in the fecundity of invention that Wren was able to display in internal space-arrangements that a large part of their importance for his architectural development consists. Indeed, the variety is amazing; there are plain rectangular plans with vaulted ceilings, there is every variety of single- and double-aisled plan, and there are such interesting variations as the east end of St. Clement Danes. Perhaps most fascinating of all are the domed churches, domes on square plans, as at St. Anne and St. Agnes, and St. Mildred Bread Street, domes on polygons as in the two lost churches of St. Antholin and St.

Benet Fink or the surviving St. Swithin's, Cannon Street, and the supreme example of St. Stephen's, Walbrook. The detail treatment of the exteriors, however, is also interesting from the point of view of Wren's development. Broadly, the growing certitude that came with experience can be observed in these features too, and, whereas the earliest churches show an extraordinary catholicity of taste in the sources on which Wren has drawn, some churches clearly deriving in detail *motifs* from French and even Dutch sources, while others of approximately the same dates have a strictly orthodox Italian derivation – in the later examples there is more discrimination in the borrowings. As might be expected, the main sources are Serlio and the French buildings that Wren had seen or knew from engravings.

Not all the churches were built from the proceeds of the coal tax, and three very important examples were paid for by subscription or by private enterprise : St. Andrew's, Holborn ; St. Clement Danes ; and St. James's, Piccadilly – the last being due to that Lord St. Albans whom Wren met in Paris, who built it as part of his development schemes in the West End. All these three are comparatively late churches, built in the eighties, and all are aisled churches with galleries. Some time towards the end of Queen Anne's reign, when Wren wrote a memorandum on parish church requirements in form of a letter to one of the Commissioners under the new Act of Parliament for building fifty additional churches, he singled out St. James's, Piccadilly, for special mention as a design both economical and

capacious. "I can hardly think it practicable to make a single Room, so capacious, with Pews and Galleries, as to hold above 2,000 Persons, and all to hear the Service, and both to hear distinctly and see the Preacher. I endeavoured to effect this, in building the Parish church of St. James, Westminster, which, I presume, is the most capacious, with these qualifications, that hath yet been built ; and yet at a solemn Time, when the Church was much crowded, I could not discern from a Gallery that 2,000 were present. In this Church I mention, though very broad, and the Middle Nave arched up, yet there are no Walls of a second Order, nor Lanterns, nor Buttresses, but the whole Roof rests upon the Pillars, as do the Galleries ; I think it may be found beautiful and convenient, and as such, the cheapest of any Form I could invent." The whole letter is interesting, though too long for further quotation here, but this is the only reference to his own work that it contains.

Of the buildings of the early seventies, other than churches, the first one of importance is Temple Bar, now standing as an entrance gate to Theobald's Park. In its design Wren abandoned the scheme deriving from a Roman triumphal arch, that Inigo Jones had adopted for the earlier building on the site, and used a scheme rather like the upper part of a French church façade resting on a broad, flat-arched bridge. The triumphal arch *motif*, of which there were plenty of examples in Serlio, was abandoned, in spite of the prestige of Jones's name, probably for reasons of traffic. The building has the same rather gauche charm

as the Emmanuel College Chapel façade. The Wren drawings at All Souls also include a section of a theatre which is believed to be Drury Lane, said to have been rebuilt by Wren for Killigrew in 1672, but this is not certain.

At Wren's appointment to the Surveyorship in 1669 the Crown was engaged in building at Greenwich under Webb, and at Newmarket, where a residence for Charles was begun in 1668 by an architect called Samuel who is known also as the author of the seventeenth-century Eaton Hall, Cheshire, both buildings having since disappeared. These works at Greenwich and Newmarket were carried out under their respective architects, and after 1673 the rebuilding of Windsor by Hugh May was put in hand. Wren himself did not get the chance of a first-rate building for the Crown until the Winchester Palace scheme of 1683. Of the two royal works that he did undertake, the first is Greenwich Observatory, which was built by the Ordnance Department, not the Office of Works, in the words of the order, "to such plat and design as shall be given you by Sir Christopher Wren." This was in June 1675, and on June 22 the entry appears in Hooke's Diary: "At Sir Chr. Wren order . . . to direct Observatory in Greenwich park for Sir J. More. He promised money." This is Sir Jonas Moore, a member of the Royal Society and Surveyor of the Ordnance. The Greenwich Observatory is a curious building, and a few years later Wren made this amusing comment on it in a letter to Dr. Fell, who was anxious to put an observatory on the top of the gate of Christ

Church, Oxford, now Tom Tower : " Wee built indeed an Observatory at Greenwich, not unlike what your Tower will prove, it was for the Observatory habitation and a little for Pompe ; It is the instruments in the Court after the manner I have described which are used, the room keeps the clocks and the instruments that are layed by." The other work was a more ambitious matter, a great mausoleum to be built at Windsor for Charles I. Elaborate drawings for this, including two for sculptural groups by Grinling Gibbons, are in the collection at All Souls, together with a detailed estimate working out at £43,663. Parliament voted the money on January 30, 1678, but nothing was done. In relation to the date of the designs it is curious to note that as early as October 1677, Wren and Hooke had several discussions on mausolea as described by the ancient authorities. The designs are extremely fine, a circular, rusticated building on a plinth surrounded by an order of Corinthian half-columns surmounted by a dome and lantern standing on a drum. These last bear a strong resemblance to the drum and lantern of the warrant design for St. Paul's and derive from Michael Angelo's model for St. Peter's. There are several other related designs by Wren, of later date than this, intended for a detached baptistery to stand before the west end of St. Paul's, and it is curious to note that Nicholas Hawksmoor, who is said to have come to Wren as a pupil in 1679, seems to have recurred to these designs in the last building he ever did, the mausoleum at Castle Howard (1726-36).

In the course of Wren's work as Surveyor we find him in these years with a great variety of special duties. He had to report on Samuel's work at Newmarket and to deal with difficulties that arose there with the builders. In the State Papers there are also reports by him on rebuilding schemes at the Savoy and at Mile End, and we find him taking a stand about an incipient slum that was growing up in Soho. A less pleasant duty is mentioned in a news-letter of 1670: "On Saturday 13th [June 1670] according to an order of the Council Board, Dr. Wren, the King's Surveyor, disfurnished four or five places erected by Nonconformists of several persuasions in and about the city." Sometimes he had to make ready the Court theatre for performances, but it is worth remarking that Streeter, the painter who had decorated the Sheldonian, seems to be employed to design the scenery and costumes, a job that in Inigo Jones's time was always done by the Surveyor himself.

There are some private commissions of these years that deserve attention, of which the first was Bishop's Hostel, Trinity College, Cambridge, begun in 1669. We have no documents connecting Wren's name with this building, but a very strong probability that his advice was taken at any rate; for the building contractor was that Minchin who appears in the letter of 1665 to Bathurst, and, moreover, Minchin was a Bletchington man. Wren's authorship of the second building is suggested by the State Papers for 1671, which contain some letters to Williamson, Lord Arlington's secretary, from Dr. Fell, the Dean of

Christ Church, Oxford. In the first letter Dr. Fell refers to some small work that Wren was doing at Oxford, but leaves its identity uncertain, but in the second he says : " Mr. Surveyor will assist you in the particulars of your contract besides the measuring of the whole building with reference to strength and ornament." This refers to the building begun the following year at Queen's College, Oxford, at Williamson's expense. It still exists in an altered condition, but our best knowledge of it is from Loggan's print of the college issued three years later. In 1673 the State Papers record that Packer, the Paymaster of the Works, visited Oxford to inspect the building. These two buildings may be taken as typical of works with which Wren was certainly connected, though exactly how much he did about them is not known. Probably he gave a scheme and advised about the contracts, though in some cases he seems to have revised schemes which were originated by the local builders. An instance occurs in 1682 about some work at Easton Neston House, Northamptonshire, where a letter from Wren to the owner implies that he had never seen the place and only advised the builder who had been sent to London to consult him. The much debated case of Trinity College Chapel, Oxford, is another instance where the degree of Wren's responsibility is uncertain ; though, of course, with these Oxford buildings, Wren certainly knew the local circumstances perfectly and he was presumably often there even after he had resigned his official position in 1673. There are no doubt degrees of responsibility varying with different buildings.

Sometime in 1674 or 1675, Wren seems to have been called in again at Cambridge, probably through Dr. Barrow, Master of Trinity College, an old friend and a great admirer of his mathematical abilities. The university was contemplating the building of a library and senate house. *Parentalia* mentions a design for this and gives the date 1678, but in the Hooke Diary there is a reference to the Cambridge "theatre" as early as March 1675. The design exists among the Wren drawings at All Souls. It is an interesting and ingenious scheme and seems to show that Wren was affected by Palladio about this time, an impression that is confirmed by the first design for the Library of Trinity College, which must date from 1675 or earlier, for work began on the final scheme in the following year. The first design seems to be based on Palladio's Villa Rotundo, a square building with a portico on every side, and a dome. There are also signs of a study of Palladio in some of the early parish church designs. The Senate House scheme came to nothing, and the actual building that was begun at Trinity College in 1676 is finer than the building suggested by the domed design. Again in working for a learned body, Wren has set out to recapture the sober splendour and dignity of the antique. The design is one of his finest, and one in which he was least interfered with, and which has suffered least from the alterations of succeeding generations. The building is very fully documented, with several drawings and a letter to the clients sent with them. The letter is too long to quote in full, but the following extract refers to

the most celebrated point of the design, the level of the Library floor in relation to the arches of the cloister: "I have given the appearance of arches as the order required fair and lofty; but I have laid the floor of the library upon the impostes, which answer to the pillars in the cloister, and the levels of the old floors, and have filled the arches with relieves of stone, of which I have seen the effect abroad in good buildings and I assure you where porches are low with flat ceilings is infinitely more graceful than flat ceilings would be, and is much more open and pleasant; nor need the mason feare the performance, because the arch discharges the weight and I shall direct him in a firm manner of executing the design. By this contrivance the windowes of the Library rise high and give place for desks against the walls and being high may be afforded to be large. . . ." The reference to the building abroad is an interesting one, an instance of what Wren means is the arcade treatment of the Hôtel Beauvais which he almost certainly had seen, but there are other examples. The interior of the Library was not finished with all its fittings and the carvings by Grinling Gibbons till the nineties, but the drawings at All Souls show how closely Wren supervised all the details even down to the reading-tables and stools.

The name of Grinling Gibbons is frequently associated with the early work of Wren at the City churches; this, however, is without foundation. The Vestries employed their own favourite carvers, and Gibbons, who was a Court rather than a City man, remains outside that circle.

Indeed, the only parish church on which he worked is St. James's, Piccadilly, about 1685. This must be the earliest surviving work that he did for Wren, though he had been brought to his notice as early as 1671, when Wren and Pepys dined with Evelyn and were taken to see the work of the new carver that Evelyn had just discovered, and in 1678 they had certainly collaborated on the design for Charles I's Mausoleum. The story of Evelyn's discovery of the young carver and his presentation to Charles and the Queen is well known, but it is interesting to note that it was the introduction to Hugh May that brought immediate employment. Wren had no occasion to employ Gibbons, except on the Mausoleum design, until the work for Charles at Whitehall in the early eighties, as far as we know.

As the quoted figures of the coal tax show, the years following the increase of the tax in 1670 did not provide sufficient funds to warrant a very go-ahead policy in regard to St. Paul's. These years are, however, a time of quite extraordinary interest in relation to the design. The actual work that was going on was mainly the clearing away of the ruins of the old building, but at the same time Wren was continually working on the design for the new building, though it was not until 1675 that he was finally authorised to proceed with the work. The works of demolition are described in *Parentalia*, and the accounts supplement this. It was no small task, and we hear of scaffolding being erected for the taking down of the great rose window at the east end, familiar to us from engravings. *Parentalia* mentions

battering-rams as being employed to knock down walls. Any seventeenth-century architect, and especially Wren with his mechanical turn of mind, must have rejoiced in such an opportunity to put into practice the instructions of Vitruvius and his Italian followers, for such antique military engines occupy a large part of their books. Wren went even further and used gunpowder, but unfortunately a large piece of stone flew and struck the balcony of a neighbouring house. After this the blasting operations seem to have been abandoned, and the services of the gunner from the Tower were no more required. The demolitions went on after 1675 parallel with the rebuilding, and it was not till the nineties that the convocation house which had long served as an office for the works was pulled down, though most of the old building seems to have gone by 1687.

The stages through which the St. Paul's design passed from 1669 to 1673 are obscure. A model was made and finished in 1672 which Hooke saw in the November of that year and says had been approved by the King. This was no doubt the first of the two models described in *Parentalia*, and the one seen and criticised by Sir Roger Pratt in the summer of 1673. Recently a much damaged model has come to light at St. Paul's which is certainly the remains of this. By comparing the two accounts of it with the remaining fragment a very curious building results. It consists of a rectangular main body without aisles on the ground level, but with long external arcaded loggias above which were galleries looking into the church. The loggias were returned round

the east end where they had some sort of portico above. At the west end was an "ante-chapel," with three state entrances and surmounted by a lofty dome, in this respect anticipating the design of the chapel of Greenwich Hospital. Internally the main body of the church would have resembled a larger version of St. James's, Piccadilly, or St. Andrew's, Holborn, if the aisles beneath the galleries of those churches were cut off by walls from the central part of the nave. The effect produced was one in which the main volume of the interior was at gallery level as it still is in these parish churches. It is possible that the external loggias were intended as covered walks for the citizens, a compensation for their exclusion from the inside of the church except for purposes of worship, and that they are a survival of the idea that St. Paul's was a place of public resort for business and conversation as well as a church, as we know it to have been considered in the earlier seventeenth century. The whole building was on a considerably smaller scale than any of the later schemes. It is possible that the state vestibule or "ante-chapel" survived as a feature of the second model, which was begun in October 1673, and is mentioned in the royal letters patent of November: "We have caused several designs to that Purpose, to be prepared by Dr. Christopher Wren, Surveyor-General of All our Works and Buildings, which we have seen and one of which we do more especially approve and have commanded a model thereof to be made." This is the great model that still exists entire, a splendid piece of work some eighteen

feet in length and big enough to show the effect inside as well as out. It took very near a year to complete, for it was not till September 1674 that Hooke saw it complete with the little statues in place. These have now disappeared, but are shown in a picture in Longman's *Three Churches dedicated to St. Paul*. The great model is a church the main body of which is a large dome at the intersection of an equal armed cross, set in an octagon, the oblique sides of which are concave. It is preceded at the west end by a domed vestibule with three entrances. This last is the feature that seems to be a survival from the earlier model, though in its present form it appears to derive from Sangallo's design for St. Peter's. There are drawings of a version of the great model design lacking this domed vestibule. Foundations were marked out during the summer of 1674, and even some preliminary work done for starting on this design.

Some time in the latter part of 1674 the St. Paul's design underwent a revolution. *Parentalia* says the chapter and clergy thought the great model not cathedral-like enough, especially as regards the form of the choir, which was circular. A more cogent objection may well have been that it was difficult to build it gradually in parts, for this point is especially mentioned in the eventual warrant for starting work in 1675. *Parentalia* also says that the great model was the favourite scheme of Wren himself. In beginning again, Wren went back to something more closely related to his pre-Fire of London combination of Inigo Jones's restoration with a dome at the

crossing. His work on the great model and its related drawings seems to have confirmed in his mind the desire to get breadth of spatial effect out of his dome, the very point in which the pre-Fire scheme was weakest. There are numerous drawings which seem to be leading up to the warrant design of May 1675, which are all alike in this search after a broad internal effect for the dome space. There is, however, an essential difficulty about a broad, low dome at the intersection of the arms of a big, cross-planned church. The length of the nave, transepts, and choir are liable to obscure the dome from the four main viewpoints. It was one of the merits of the great model scheme that with its octagonal form and concave sides it avoided this difficulty in the main. Moreover, as Wren emphasised in his pre-Fire report, people expected St. Paul's to have a high central feature. In the final scheme on which the royal warrant to proceed was issued, he endeavoured to get a compromise by placing a very large lantern, itself a considerable dome on a tall drum, on top of his main, broad, low dome, and surmounting the whole with a spire rather in the manner of that later built at St. Bride's. The effect of all this in true elevation – it would probably have looked better in actual fact as seen from ground level – is rather uncouth and bizarre, and has led to much extraordinary speculation as to how it came about. Apart from the dome, lantern, and spire, the external treatment of the warrant design is clearly derived from Inigo Jones's restoration. There is a similar projecting portico at the west, and even the window

treatment is reminiscent of his. In plan, however, the design is of the very greatest importance and is certainly the basis of the existing plan. The treatment of the west end and of the transept porches has been changed, but the choir plan of the warrant design is the one on which work was immediately begun and is that of the present St. Paul's. The ground plan of the dome space is also very nearly as at present. In *Parentalia* it is said that the King allowed Wren the liberty to make changes in the design. However that may have been, changes were certainly made in the external effect of the choir quite soon, for by 1681, when the work had reached the springing of the arches of the windows, the external treatment in two arches with coupled pilasters must have been settled. The bay design of the upper order, with its pillared and pedimented niches between pilasters, seems to derive from Serlio's illustrations of the treatment of the interior of the Pantheon, just as the relation of the interior order to the arcade is based on the Temple of Peace in the same book, another change that must have been decided within the first few years of the undertaking.

Important as the years 1670 to 1680 are for Wren's career as an architect, they are equally eventful in his personal life, and thanks to Hooke's Diary we are well informed about them, for the Diary is quite as illuminating about this aspect of Wren as about his architecture or the scientific interests that Hooke shared with him. The Diary is, moreover, apart from Evelyn and the very few personal letters that have survived, the only real

evidence we have on the subject. The two men were very intimate and met either on business or convivially (sometimes both) almost daily. At times they would dine together as often as twice a week. Their fondness for coffee-houses has been mentioned, and, indeed, it is quite surprising how much of their time seems to have been spent there. Wren's favourite coffee-houses seem to have been Garaway's in Cornhill and Child's in St. Paul's Churchyard, though Man's in Chancery Lane runs them close. The editors of the Hooke Diary quoted a good description of a coffee-house of this time from an Italian traveller who came here in 1667. He says that other drinks were sold besides coffee: "tea, chocolate, sorbets, cider, etc., according to season. These houses have rooms or alcoves for the reading of the news, where one may hear what has happened or what is rumoured, whether it be true or false. In winter, to sit at a great fire and smoke for two hours costs but two pence and one pays for one's drinks besides." It is in such surroundings as these that one must picture them both in February 1678, when Hooke records: "With Sir Christopher at coffee-house. Spoke of his Theory of Respiration, Muscular Motion etc. delivered to Mr. Boyle. Shewed me his draught of Mausoleum" (for Charles I at Windsor). Perhaps the most amusing reference to a tavern occurs on October 20, 1676, being a Friday: "Post prandium at Sir J. Hoskins. With him and Aubrey to Sir Chr. Wren at Palsgraves Head. Sir Chr. Wren's birthday. He paid all. . . . Good discourse." And next day comes the entry: "Sent Sir Chr. Wren's son a

hobby horse, 14^{sh} paid." The son was young Christopher born in February 1675. Wren's eldest child, Gilbert, had been born in October 1672, when Hooke curiously records: "Dr. Bradford assured Dr. Wren that his next child would be a boy, this being born in the increase of the moon." Gilbert apparently was delicate — we hear of convulsions — and died in March 1674. On September 4, 1675, Lady Wren died of smallpox, after an illness of eleven days, leaving Sir Christopher with the young baby of only seven months old.

In the Diary, Hooke seems to become closer friends with Wren as the years go on. This is perhaps especially noticeable after Lady Wren's death, when he and Aubrey and Sir J. Hoskins seem to stand out as Wren's especial friends. These and some others formed a sort of informal club and met together frequently. With our knowledge of Wren and Hooke, and especially of Aubrey, it is not surprising to find that the conversation touched on an immense range of topics: "Discoursed about petrifications of Bodys, about plaister, about forming of glasse, form of arches, light gold statues, staining marble (an old topic this), Filigreen sodering with bran, about printing stuffs and gilding stuffs, about Dr. Moor's notions, about ghosts and spirits." On that occasion Dr. Holder was present, and it is pleasant to find him often with Wren at this time. He still retained his interest in musical theory, it seems, and had long discussions on the subject with Hooke. One friend who must have been sadly missed was cousin Matthew who had died in the summer of 1672.

Wren did not remain long a widower. On February 24, 1677, he married Jane Fitzwilliam, sister of Lord Fitzwilliam of Lifford, who was eventually to become Earl Fitzwilliam in the early years of the eighteenth century. Apparently it was a rather sudden match, for Hooke, who was seeing Wren regularly in the days just before the marriage, could not remember the lady's name in his entry of February 24. He does not mention meeting her till April. In the next few years, however, he and Lady Wren became good friends and the marriage does not seem to have interfered in any way with the intimacy of the two men. In 1679, for example, we find Hooke making Wren a present of a grand watch made by Tompion and costing £8. On November 9, 1677, Wren's daughter Jane was born; said to be the favourite of his children. Another child, William, was born to them in June 1679, who seems to have been delicate, for we hear on occasion of his ill health, and in his will Sir Christopher left him to the charge of his elder brother. Wren's second marriage lasted even less time than his first, for by October 1680 the second Lady Wren was dead. It would seem that she had been ill for some little time, for Hooke remarks on September 18 that she was recovered.

The miscellaneous information about Wren scattered up and down among the telegraphic entries of the Diary is surprising. Hooke and he used to smoke together, though this does not appear in the earlier part of the Diary. Occasionally they went to entertainments: once to a performance of *The Tempest*; another time "with

Sir. Chr. Wren to Boyle, and near coffee house at Bartholomew Fair, saw Elephant wave colours, shoot a gun, bend and kneel, carry a castle and a man, etc." Three days after the visit to Boyle and the elephant we find: "Walk'd with Sir Chr. Wren in the Park, told him of double vaulting Pauls with cramps between." The date of Wren's knighthood appears amusingly as " (1673) Friday November 14th Dr. Wren knighted and gone to Oxford." Wren's health is the occasion of remarks every now and again. He takes physic or has a sore throat or the trouble with the stone in March 1675, but on the whole he seems to have fairly good health, and Hooke was very observant on that point. Sometimes his temper is noted, as "At Sir Chr. Wren's, Mrs. Marshall angry. Sir Chr. not kind," and there are other occasions. Where Wren lived, Hooke never bothers to say. Sometimes he mentions Scotland Yard, but there was obviously another house as well, for in March 1676, "Sir Christopher let his house for £32 per annum for one year." Wren is said to have had a house in Bloomsbury and perhaps this was it. He certainly lived in some state and kept a coach and a footman, for Hooke often gets lifts and occasionally tips the coachman and footman. One of the most interesting features of the Diary to the student of Wren is the references to architectural books and pictures that Hooke acquired. They give some idea of the sources of precedent available to architects at that time. There is a very high percentage of French books, such as Marot, Le Muet, Felibien, and a vast quantity of loose engravings by Perelle and

Israel Sylvestre, and including a quantity of engraved designs for furniture, ornament and so forth ; but Italian prints are not lacking. Hooke had St. Peter's, Sta. Maria della Pace, the Gesu, the Piazzo del Popolo, Bernini's Piazza San Pietro, as well as Sandrart's book, Rubens's Palazzi di Genova, and Vasari and Palladio. Only one Dutch architectural book is mentioned, Philip Vingboom's.

CHAPTER IV

Chelsea Hospital and Winchester – alterations at Whitehall for James II and Mary II – work at the Temple – Christ Church, Oxford, and Wren's Gothic – the Royal Society – Parliament – Wren as a man of affairs – progress of St. Paul's – Wren's craftsmen – Hampton Court and Kensington Palaces – Wren's later colleagues – Greenwich Hospital and the designs for Whitehall.

THE greatest surviving building by Sir Christopher Wren from the sixteen-eighties is Chelsea Hospital. It is also the only building of the first magnitude, other than St. Paul's, that he ever completed, for Hampton Court and Greenwich Hospital are but fragments of larger schemes. Moreover, Chelsea is alone among his greater buildings in not being in some degree conditioned by pre-existing buildings. It is a work of his early maturity carried out in one effort from 1682 to 1691, and the building was completely roofed by 1684. And though there was time enough in these nine years for a certain amount of detail revision of the design of the interior fittings and finishings, there was no question of that long, slow, matured consideration of the principal features that distinguishes St. Paul's among his works. All these circumstances combine to give it a special importance.

The scheme of the building is a great three-sided court facing south; the central range of the three consists of the hall and chapel, and the east and west wings are of three storeys and attics.

On the outer sides of these wings large subordinate courts are formed by smaller and lower pavilions standing at right angles to the great wings. This arrangement provides for the maximum of light and air for the soldiers' wards in the great wings. The building is carried out in brick with stone and painted wooden dressings. It has a hipped roof with a bold wooden eaves cornice, dormer windows and bold chimneys, all in the typical late seventeenth-century manner as introduced by Jones and Pratt in the middle years of the century. Each long front of the main building, including the sides of the great wings towards the main court, have central features with colossal columns or pilasters and pediments. Of these features those which form climaxes at the ends of deep courts stand very boldly forward from the brick buildings. Across the end of the main court is a covered cloister supported on coupled columns, interrupted in the middle by the bold portico of colossal columns which forms the centre feature on that side and above which rises the lantern tower over the entrance passage to the hall and chapel. An especially interesting and daring feature of the design is the chimneys of the small low pavilions, which form the sides of the subordinate east and west courts. They are proportioned to their position in relation to the great wings which form the ends of the courts, and in consequence have been made of enormous size, having regard to the building on which they stand. Chelsea is justly admired as an example of Wren's handling of brick building. He had, of course, used this material often before, and

one of his most delightful brick designs is St. Benet's, Thames Street, begun in 1677. Wren was extremely fortunate in that he came to architecture when brick-work in England was at a very high level. The movement initiated under Inigo Jones to encourage brick buildings in London, and the work of successive authorities, including Pratt and Wren himself, had encouraged and promoted the use of brick and its technical improvement and led to the establishment of a fine tradition.

Another feature of the Chelsea Hospital design is the use of a colossal order with a smaller one in close juxtaposition. This seems to link it with the design for Charles II's palace at Winchester, a work almost exactly coinciding with it in dates. Evelyn says that the intention to build at Winchester was much strengthened by the burning of the King's house at Newmarket in June 1683, but it certainly dates back to more than a year before. The Winchester palace was never completed, and there are not many drawings. The plan seems to have resembled that of Versailles as altered by Le Vau before the enlargements by Mansard began in the eighties. As at Chelsea, one of the main features was a deep three-sided court, the climax of which seems to have been a portico of colossal columns associated with smaller ones. The materials were brick and Portland stone. The window-dressings were of rather a Palladian type, and, instead of the normal late seventeenth-century domestic roof with dormer windows and heavy eaves cornice that we find at Chelsea, there was to be a parapet

pierced at intervals with balustrading. This was no doubt considered more monumental and fitting for a royal palace. After Charles's death, in February 1685, work seems to have been suspended. In May of that year, James II started his important alterations to Whitehall, which were pressed on with all possible speed and were in fact complete by November of the following year.

These Whitehall buildings for James II consisted in the main of a range of large buildings running from near the western end of the Banqueting Hall nearly to the river. They included a grand staircase, a long gallery, new apartments for the Queen, a new royal chapel with accommodation for the priests, and a council chamber. We know a certain amount about them from the accounts, and a few drawings have survived which show them to have been of brick with stone and rubbed brick dressings. They had the high-pitched roof, dormers, and eaves cornice of the time as at Chelsea, but naturally the work was carried out more solidly and expensively and stone was employed where wood sufficed at Chelsea. The great point of the design was the interior arrangements and decorations, and from the accounts we can get some idea of these sumptuous baroqueries, the marble chimney-pieces, the painted ceilings and the great staircase of Portland stone and marble with a wrought iron balustrade, the first feature of the kind Wren had the chance to carry out. Above all, the royal chapel attracted public attention as much because it scandalised Protestant feeling and reminded folk that their new King was a devoted Catholic, as

by the splendour of its interior. All that remains of its provocative grandeur are some fragments of Quellin's sculptured altar-piece in a country church in Somerset, and the organ which Queen Mary II gave to St. James's, Piccadilly, after the dismantling of the chapel at the Revolution of 1688. It is interesting to note that Wren had done a certain amount of grand interior decoration at Whitehall in the King's new apartments for Charles II in 1682, to which reference is made in the estimate for the larger building. At the very end of his reign, James II began a further extension of the Queen's apartments at Whitehall in the form of a fine block by Wren facing the river. Drawings of this exist, and it is shown in the bird's-eye view of Whitehall drawn between 1695-8. In this it appears as it was completed by the formation of an embankment terrace projecting into the river and laid out as a formal garden. This sounds an extravagant if delightful idea, but almost certainly was intended to serve the very practical purpose of substituting a garden terrace for the unsavoury tidal mud that extended all along the river side of the palace at low water. The embankment garden stretched along the wide front of the Queen's new block and the King's apartments as done up in 1682. The new block was in building in 1688 and 1689 and the embankment garden followed in 1691-3.

Another group of brick and stone domestic buildings of this time are those executed to Wren's design for the Temple. Of these the Middle Temple gate is the most important, but Wren also did a scheme for the cloisters between

the Inner and Middle Temple, where the exploitation of the site had been handed over to Dr. Barbon, a well-known building speculator of the time. Barbon's scheme seems to have been superseded in favour of Wren's. The Middle Temple gateway is not a design of the first importance, but it is a very fine and admirable example of ingenious handling of brick and stone. The facing bricks between the stone pilasters are all "rubbers"—that is, soft bricks that can be rubbed down so as to make a very fine join. They had been introduced in the first half of the century, and were used in Wren's time, sometimes with extraordinary virtuosity in carved brick effects. At the Middle Temple they are used quite simply but very originally to give a specially rich surface texture to the walls. These works at the Temple date from 1680 for the cloisters and 1683 for the gate. It is interesting to note that the societies presented Wren with twelve silver trencher plates to the value of some £48 on the completion of the building. Presents of this kind seem to have been customary when he worked for learned bodies, for the grandest of them was that of Archbishop Sheldon, who gave Wren gold plate to the value of £200 on the completion of the Sheldonian Theatre.

Two other interesting brick buildings of the early eighties have been attributed to Wren—the south range at Christ's Hospital (1682), and Kilmainham Hospital, Dublin (1679). The work at Christ's Hospital was a charming composition in brick, and Wren was certainly closely connected with the government of the

school, and equally certainly designed some further additions to it at a later date; but we cannot verify this particular design from documents, and there were other architects, including Hooke, also connected with the institution. Kilmainham Hospital was a scheme similar to Chelsea, dating from a few years earlier. The ascription to Wren rests on an account of the institution published in 1711, in which it is said that "orders were issued to H.M. Surveyor of Buildings (whom they thought most proper to advise in that behalf) requiring that he do with all convenient speed view the lands of Kilmainham near Dublin." But there was an official of the Government of Ireland with that title (which was not Wren's), by name, William Robinson, who was certainly concerned with the building of Kilmainham, and it seems almost certain that it is to him we should give the credit of this delightful little work.

There is one design by Wren of 1681 that deserves special attention, though it is not on the largest scale—the completion of Tom Tower gateway, at Christ Church, Oxford. It is interesting partly because we have a series of letters from Wren to the Bishop of Oxford about it which well illustrate his methods and the difficulty he had in carrying out work at a distance from London. He had peculiar difficulties in getting an accurate survey of the building to which he was adding. But the main interest of Tom Tower consists in the fact that it is a Gothic design. It is not actually the first building Wren did in this manner, for St. Mary, Aldermanbury,

was finished in 1682, the same year as Tom Tower, but had presumably been begun earlier. Wren's other Gothic designs – the towers of St. Dunstan's in the East ; St. Alban's, Wood Street ; St. Michael, Cornhill ; and the work at Westminster Abbey – mainly belong to the last phase of his career. It seems probable that the use of Gothic at St. Mary, Aldermanbury, was imposed on Wren by the desire of the benefactor who paid for it, and that this interested him and accustomed him to the manner. He had, of course, undertaken to advise and report about structural problems at Salisbury Cathedral as early as 1668. Wren's Gothic, and even more that of his pupil Hawksmoor, at All Souls and Westminster, has come in for much abuse and misunderstanding, which is the survival of the general neglect of any attempt to understand the point of view of the Baroque architects on the part of the nineteenth-century critics. To Wren and his followers, especially Hawksmoor, mediæval architecture was largely interesting as affording suggestions for bold compositional effects, striking silhouettes, effects of strong vertical shadows, and so forth. When they executed these with classically derived detail, as in some of Wren's most admired City church towers, or in Hawksmoor's fine hall of All Souls, and some of his church towers, the admirable effect is more easily appreciated than when they actually imitate Gothic details, which are harder for us to stomach. One of the most interesting documents bearing on this picturesque Baroque view of Gothic is a drawing in the Wren collection at All Souls, showing Warwick Church

in perspective with the detail hardly shown, but all the shadows and the effects of vertical masses clearly indicated. Tom Tower, though the earliest of the Gothic towers, is one of the most successful. Wren had to do some very skilful adaptation of the lower sixteenth-century part of the structure, which was presumably intended to carry a rectangular gatehouse tower with angle turrets, to enable him to build his octagonal lantern with its ogee dome. All this is explained very clearly in one of the letters, but the description is too complex to quote here.

During this long period of architectural activity from 1670-90, Wren remained an active member of the Royal Society, becoming vice-president in 1674 and president for two years from 1681-3, when he was succeeded by his friend, Sir John Hoskyns. Wren attended most of the meetings and took part in the discussions, often having to take the chair. He also served on various special sub-committees of the Society to investigate the work submitted to them, such as Hooke's new quadrant in 1674, and in the same year he was appointed to a special commission, with Hooke and Seth Ward and others, to try to discover some satisfactory method of finding longitude at sea. This was an urgent practical problem, and Wren occupied himself with it on and off all his life. It was not solved in a practical way until after his death. It is quite clear from the Royal Society's records and from the Hooke Diary, that Wren's interest in scientific matters was as keen as ever during this period, but inevitably had become an interest on the part of a busy man of

affairs rather than a part of his real work. It was in his term of office as president that the Society sold the land on which he built Chelsea Hospital. Undoubtedly the whole conception of that scheme as an institution and organisation as well as a building is very largely due to him, and when the building was finished he remained for many years one of the most important of the Commissioners who governed it. Wren as a man of affairs, as well as an architect and a man of science, appears increasingly in the late 1670's and 1680's, for, in addition to his work for the Royal Society and in promoting the Chelsea scheme, he served from 1679 to 1683 as one of the Council of the Hudson Bay Company, and from 1685 to 1687 as Member of Parliament for Plympton in Devon. It is difficult to find out much about his Parliamentary career. He was presumably first of all a "place man" – that is, one of the solid body of members who held paid offices under the Crown, and on whom the Government of the day relied to support their policy in the House. We can also suppose, I think, that he was a Tory, i.e. one of the High Church monarchical party. Family tradition would suggest it, and it is borne out by the fact that he stood for the University of Oxford in 1673, when, however, he was unsuccessful. Possibly he was not Tory enough. The fact that his election to the Convention Parliament of 1688 for Windsor, where he still had considerable family connections, was declared void would seem, however, to suggest that he belonged to the Tory party, for these things were always decided by the House on party lines,

except that the Tory Parliament of 1690 again disallowed his election. Almost certainly he was not seriously a party man. He was to get into Parliament again for a few months from December 1701 to July 1702 as Member for Weymouth. We have only one record of Wren's work actually in Parliament, when in June 1685 he was one of the members selected to bring in a Bill for financing Chelsea Hospital out of the proceeds of a tax on hackney coaches.

From 1688 there is a document surviving which shows Wren in partnership with a certain Roger Jackson, buying land at the Barbican in the City to the value of £4,400. This was a very considerable amount in those days, and was possibly a land, or more probably a building, speculation. Quite apart from the results of the Great Fire, the late seventeenth century was a time of considerable activity on the part of building speculators, for London was growing very fast. Wren had much to do with this in his capacity as Surveyor-General, regulating and controlling it. In 1684 he had to take drastic action in a very troublesome matter involving Dr. Barbon, the most famous of these speculators. It is curious from a present-day point of view to find Wren apparently involved in such transactions himself, but to the seventeenth century such conduct would not seem to be even an indiscretion. This speculation with Jackson also raises the question of Wren's financial position. Clearly, from the evidence of his way of life, and his subsequent purchase of a country estate for his son, he made a very comfortable fortune. His official positions

were comfortably but not extremely highly paid. It is said that his fees for the City churches amounted to a very large sum, but it is difficult to be certain. For some works he got a special fee, as £1,000 for Chelsea Hospital, but he certainly gave his services in some instances free or for a purely nominal reward. During the 1680's Wren received an increase of official salary, but it was not a large one. Hugh May died in February 1684, and in the same year Wren succeeded to his position at Windsor. Work on the new building was, however, finished by then, and the appointment did not mean very much.

In the warrant of 1675 the design of St. Paul's had been approved, partly on the grounds that it could be completed by instalments. This intention was followed in some degree, for the choir was certainly finished and fitted up first, and was complete by the autumn of 1697, when Evelyn notes that "5 December was the first Sunday it had had a service performed in it since it was begun in 1666." The official opening had taken place three days before for the celebration of the Peace of Ryswick. The work was not, however, undertaken as strictly by parts as a modern enterprise of the kind – for example, Liverpool Cathedral – and by the time the choir was open the western parts of the church and the great lower works of the dome were in quite an advanced state. The western parts were taken seriously in hand after 1687, but the transepts and dome supports had been well advanced in 1685. Of the great changes from the warrant scheme, we have mentioned the bay design both internally

and externally, and the raising of the outer walls to the full height of the church to screen the aisle roofs and the buttresses of the main high vaults as early changes. The curved porticos at the transept ends must also have been decided on fairly early. The two greatest modifications of the warrant design, the form of the western part of the church with its porticos and chapels to the east of the towers, and the form of the dome and drum were made much in that order, the first about 1687 and the second nearly ten years later. The extant drawings show various suggestions for these features. The colossal single-order portico, having the authority of Inigo Jones behind it, remained for a long time an *idée fixe*, but even after that had been abandoned the dome remained undetermined. A fine drawing exists showing the building very much as built, except that the dome and drum are an obvious derivation from Michael Angelo's St. Peter's design, though the dome of the Invalides, published in 1684, is a possible half-way house. The actual dome and drum seem to be a combination of ideas from the two great St. Peter's schemes – Bramante's, with the peristyle round the drum, and Michael Angelo's, with the strong projecting buttresses; and undoubtedly, of all the St. Paul's dome schemes that have survived to us, the executed design is the finest.

Of the changes to the west end, the double portico has been very adversely criticised, and the outside columns in the lower storey are said to support nothing adequate to their importance; but undoubtedly by the addition of the western

chapels and the corresponding enlargement of the western bay of the nave with its large saucer dome, Wren has obtained one of the finest of the interior effects of his church. It is curious to reflect that this seems to be a creeping back into the design of that domed western vestibule that survived from the first to the second model, and disappeared in the warrant scheme. This part of the church, with the western towers, including the fine geometrical stair of the south-west tower, and the lantern of the dome and the finial, are almost the greatest of Wren's achievements in design. The exterior features, and with them must be taken the towers of Greenwich Hospital and some of the late City church spires, such as St. Vedast, Foster Lane, and St. Magnus, London Bridge, are among the finest Baroque designs in Europe. An early triumph such as St. Mary-le-Bow has an almost unsophisticated charm compared with these infinitely accomplished compositions, but with all their accomplishment they have lost nothing of spontaneity. There are signs in them of a knowledge of seventeenth-century Italian architecture, especially of the towers of Boromini's, St. Agnese, which was derived, no doubt, through engravings such as Falda's book, though there are other features in the early designs for Greenwich, and some late schemes for Windsor, that show Wren still keeping in close touch with contemporary French mannerisms.

In the internal finishing of the choir at St. Paul's, Wren had the inestimable advantage of the co-operation of Jean Tijou, the smith, and Grinling Gibbons. Tijou seems to have come over about the

time of the Revolution, but little is known of his early work. He appears here at St. Paul's, and at Hampton Court and Kensington, all buildings of the 1690's, but how long he stayed is obscure. The work that he did is in the most advanced manner of the late seventeenth-century French smiths, who were very good at publishing their designs in engraving, and it is probably as much, if not more, to these engravings that the English school of ironwork of the first quarter of the eighteenth century owes its rise, as to the example of Tijou's own work. Grinling Gibbons, however, is a much better known figure, and his work at St. Paul's is perhaps the greatest of his achievements. It is fairly clear from the accounts and extant drawings how it was carried out. Drawings were made in Wren's office, showing the architectural lines of the choir stalls and organ screen, the mouldings being carefully indicated and a certain amount of sculptural enrichment suggested. It is to be supposed that these were made in consultation with Gibbons, and that the architect indicated which members were to be enriched. These designs were often carried out by the joiners and afterwards carved *in situ* by Gibbons. It should be borne in mind that the St. Paul's stalls and screens were structurally much larger and more complicated things than panelling, cornices, and chimney-pieces, in which Wren and Gibbons collaborated elsewhere, and in which Gibbons may well have been left a freer hand. In any case, the close collaboration with Wren at St. Paul's is certain. Very important things depended on it, especially in regard to the great organ, for

as originally placed over the screen the silhouette of this formed a sort of climax to the view up the nave and across the dome space, enhancing the effect of the extension of that space into the choir itself. The present arrangement whereby the organ is tucked away into the arches of the choir has almost certainly vitiated Wren's intentions in a very serious way. The drawings for a small organ in such a position, which were used by the restorers to bolster up their desire for a vista, do not affect the question. Gibbons's woodwork at St. Paul's is confined to the choir ; the finely designed screens to the Morning Chapel, and that of St. Michael and St. George opposite, are the work of Jonathan Maine. The joiners, such as Hopson, who with others built the walls for Gibbons to enrich, played a very important part in the work of designing the cathedral by making wooden models of particular details, capitals, cornices, etc., as well as the great models of the whole building in the early stages of its design which have already been discussed. Sometimes the detail models were executed by Doogood or Grove, the plasterers, and it is evident that Wren relied very largely on such models for ensuring the effects he desired. St. Paul's was an exceptional task in Wren's eyes, and it is not to be supposed that such elaborate pains were taken with all his works.

The ingenuity of the construction of St. Paul's, especially the dome, is celebrated. The two major examples of this are all that can be mentioned here. The device of the screen walls, which hide the aisle roofs and the clerestories with their

flying buttresses, also serves to buttress the re-entrant bastions at the angles of the dome space, just where the great arches on which the dome in part rests discharge their maximum thrusts. These are perhaps the supreme example. This subtlety must have been worked out early, though it is not suggested in the warrant design. But it is to be supposed that the idea of the most celebrated structural feature of the church, the great brick cone which rises above the inner dome to support the lantern and the timber framing of the outer leaden dome, did not reach its final form until comparatively late. There are many dome studies in various collections of Wren's drawings, some of which seem to show gradual evolution of this device. And it is in the final solution to the problem of the St. Paul's dome that Wren's scientific and architectural gifts find their joint consummation.

It would be unfair, perhaps, to suggest that Wren's structural ingenuity led him to feats of indiscreet daring in two of his other buildings of the 1690's, Hampton Court and Kensington Palace. In both cases the strongest pressure had been brought to bear on him — by the King and Queen themselves — to hasten the work, and, to comply with this, "Wren," to quote the editor of the Wren Society, "took great risks, for he had adopted the method of running up the outer walls in brickwork while forming the interior with crossed timber partitions on which he balanced the chimney breasts and heavy brick stacks." In both buildings the results were disastrous and collapses occurred entailing loss of life. It is also

possible that the contractors managed to evade supervision to some degree in the rush of work executed at some little distance from the architect's headquarters, and indeed a letter of Queen Mary's says something of the kind. It is possible that the special constructional methods employed in these two buildings had been tried with success at Whitehall, where the buildings of James II had been executed with extraordinary speed.

Both Hampton Court and Kensington were begun in 1689. Of the two, Hampton Court was by far the more ambitious and important work. The two great garden fronts and the Fountain Court are among the finest of Wren's designs. The interiors were left in the main unfinished, and even in 1699, when a new effort was made, only a few of them were fitted up. The quality of the work internally was extremely high, and some of these rooms are among the finest of their kind. The nature of the collaboration between Gibbons and his architect is more doubtful here than at St. Paul's. There are a number of drawings extant which seem to be of Hampton Court, some of them by Gibbons and some, apparently, by Daniel Marot, a French engraver and decorator employed by William III in Holland. In those which seem to be by Gibbons, only the barest outlines have been given and the rest left to him. These outlines are far less limiting than some of the St. Paul's drawings, presumably because the structural part of the woodwork was less complicated. Moreover, in an estimate in the Record Office we find Wren merely concurring in a detailed statement drawn up by Talman, the

Comptroller of the Works. The design of the great garden fronts and the court can be traced through several stages. The supposedly earliest designs show a very rich decorative treatment, reminding one a little of the kind of thing Wren had seen on his visits to Versailles in 1665, when a large part of the earliest building there was still visible before Le Vau masked it. There are two other schemes very much more severe in manner, the last employing two orders, and then a series of drawings leading up to the design as built. It is interesting to note that the earliest and richest design has a very picturesque sky-line with domes and lantern cupolas on towers. Something of this survives into the first plainer version, but has quite disappeared from the two-order scheme; and although the final scheme goes back to the freedom of enrichment of the earliest one in some degree, the sky-line remains uneventful.

The building as it stands, with its reliance on the contrast of brick and Portland stone and a great variety of sculptural enrichment, is a scheme that could only have been undertaken if Wren had complete reliance on the master carvers at his command. At Hampton Court they were Emmett, Gibbons, and Caius Gabriel Cibber. As in the St. Paul's choir scheme, Wren is undoubtedly responsible for the placing and degree of enrichment on each decorative feature, but it was only with a sculptor whose feeling for the exact height and relief was absolutely trustworthy that he could rely on getting his wishes carried out. The Fountain Court with its splendid range

of round windows carved by Emmett is cloistered. There is a story in *Parentalia* that, in the treatment of the arches of the cloisters, Wren was overruled by King William, who afterwards acknowledged his mistake, and it has been suggested that Wren originally intended a filled-in tympanum like the one that he used at Trinity College, Cambridge. These Hampton Court elevations are the one example of his work in brick and stone that can compare with St. Paul's in the richness of the design or the quality of the collaboration that he could command. Kensington Palace is a very much smaller affair in every way. Here Wren was merely enlarging the country house of a nobleman, and though he produced the fine south front in brick, the whole conception is quieter and less ambitious than Hampton Court. Internally there are some delightful rooms, in the decoration of which Gibbons played his part, and a fine staircase with wrought-iron balustrade of the kind to be found at Hampton Court, and known from the accounts to have been made at Whitehall for James II.

In this late period of Wren's career the personality of his colleagues and assistants takes on a new importance, for among them are to be found the only architects who can reasonably be described as forming a school deriving from him. Of his earlier colleagues, May was too well established a designer and too remote from Wren in his training as a painter to be influenced by him. If anything, the influence might be expected to flow the other way, and Hooke, who from his close personal friendship with

Wren and similar scientific bent one would expect to be most influenced by him, was carrying out his most important buildings, such as Bedlam, the Physicians' College and Montagu House, at a time when Wren's style was only just maturing. It is the men who worked with Wren in his grand final period who felt the full effect of the great architect's personality. To this, William Talman is to be considered an exception, for there is nothing in either Chatsworth or Dyrham, his best two authenticated buildings, or any extant drawings of his, that especially suggest Wren. Where his interiors do show a superficial likeness to Wren's it is probably due to the employment of the same carvers.

Talman became Comptroller of the Works in 1689, and almost at once difficulties arose between him and Wren. The Kensington Palace accident had occurred on November 7, and early in December the more serious collapse at Hampton Court took place. There are several interesting entries in the Treasury Minutes referring to this. At the first meeting, Wren and Talman are pressed for reports on the state of things at Hampton Court. It would seem that they both put in reports containing evidence of craftsmen described by Wren as "able men, not interested, bricklayers, carpenters, masons that have left off their aprons and are without suspicion of being influenced." These reports when submitted were at variance, and the Minutes record the following scene :

"January 13th at Whitehall. King not present.
Sir Christopher Wren the Surveyor General of the

Works and Mr. Talman Comptroller of the same are called in and their reports are read. The Surveyor objects against Mr. Latham (in the Comptroller's certificate) for a madman and says the work on the new buildings of their Majesties' Palace at Hampton Court has stood a new tryall in a hurrycane. Mr. Tallman says My Lord Chamberlains lodgings kept the winds absolutely from this building and that Latham is not mad. Mr. Banks says there are 24 peers next the garden and but 4 stones crackt, and the cracks no bigger than a hairs breadth ; that the building every day it stands is stronger and grows lighter. Mr. Talman says every pier is cracked that one may put his finger in. Mr. Oliver says none of the masons Mr. Talman brought understood so good work as this is. Mr. Talman says Pierce, Tompson and another (in his certificates) are three masons that Sir Christopher employs, that the piers are all hollow and crampt with iron to keep them together. Sir C. Wren : 'What was done for greater caution ought not to be maliciously interpreted.' Talman : 'Pray let 6 be chosen by me and 6 by you to judge in this matter.'

"My Lords think they'l never agree, one part will say one thing, th'other another.

"Wren : 'Put it on this - a man cannot putt his finger in the cracks.'

"Mr. Talman says they are stopped."

We have no knowledge of the upshot of all this unpleasantness, but Wren and Talman continued to work together for another eleven years, so we must suppose the matter was smoothed over.

Hw

Nicholas Hawksmoor is a much more significant figure in relation to Wren than Talman. He is supposed to have come to Wren in some such capacity as personal pupil and assistant in 1679 at the age of eighteen, and, though his name does not appear in the Hooke Diaries, in the works of the eighties and early nineties he crops up in the accounts, often in company with William Scarborough, mainly doing measuring work, but sometimes as a draughtsman, and at Kensington he became clerk of the works in 1689. In 1698, in succession to Symonds, who himself had succeeded Scarborough (both had died), he became clerk of the works at Greenwich, a job of the utmost importance for his career and his development as an architect. A year before that, he had been acting as Wren's clerk, and had received a special extra fee for preparing all the drawings for the hospital. Some time in the nineties – how early is not certain – Wren began to recommend Hawksmoor to private clients who had approached him for designs or advice. The earliest documented instance of this is at St. John's College, Cambridge, where Wren was consulted about a bridge in 1696, but shortly after handed over the matter to Hawksmoor. Both Wren's and Hawksmoor's drawings and letters are still extant in the college. The same thing was to happen in the case of King's College many years later. Another instance of uncertain date, but in the nineties, is Easton Neston House, Northamptonshire, about which Wren had been consulted as early as 1682.¹ A model, showing extraordinary ingenuity in planning and elevations which seem to derive

from some of Wren's early drawings for Hampton Court, was made by Hawksmoor, and the house, the shell of which was finished in 1702, is certainly based on this model, but with several significant changes in the elevations. There is a strong tradition that, earlier again than these examples, Hawksmoor acted for Wren, if not perhaps independently of him, in the rebuilding of Queen's College Library at Oxford, begun in 1692. Hawksmoor certainly worked at Queen's College at a later date, and it might well be that the college's first experience of him was over the library. He would be thirty-one years of age when it was begun, and with the recommendation of some ten or more years under Wren.

For the early development of the school of Wren the most important documents are Greenwich Hospital and the designs for Whitehall, prepared after the fire of January 1698. The idea of a hospital at Greenwich seems first to have been put forward as early as January 1693, when Luttrell records that Wren went down there with the Lords of the Admiralty to inspect Webb's palace with a view to converting it to the use of a hospital. No doubt the just completed Chelsea had suggested the scheme. There do not seem to be any indications as to whether Wren tried to draw out a scheme for this, for the drawings referring to Webb's building in the Wren collections are all for palaces. The scheme then passed through the phase in which it was proposed to 'pull down Webb's building and start further to the east, thus leaving the view to Inigo Jones's Queen's House unimpeded, a point Queen Mary

is said to have insisted on, and which forbade the completion of Webb's building on the lines he had planned. The next schemes seem to date from about 1696, in which year work was authorised to begin on the existing Webb building and a second subordinate range to the west of it, known as the Base Wing of King Charles. At this time it was undecided whether to cut off the Queen's House from the river with a central domed feature or to allow a vista through. All that seems to have been common to both schemes was the duplication of the King Charles block and its Base or subordinate Wing on the opposite side of the vista.

These Greenwich designs presented Wren with a new kind of architectural problem, the design of a monumental building in a series of related blocks – a group design, in short. Chelsea had been something of this kind, and the block plan for a complete rebuilding of Hampton Court was another example, but we know nothing either of its appearance or its date. The entrance court at Winchester had also been a problem of a similar kind, but all these lacked the quality of monumental scale given to the Greenwich design by the intention to retain the Webb block with its colossal order and large attic. All Wren's designs for Greenwich are distinguished by a striving after picturesque effects of grouping, whichever of the two alternative schemes he was favouring at the moment. The documents relating to Greenwich Hospital indicate that after 1702, when Vanbrugh's name first appears among the building committee, he had an increasingly

important share in the design. It is even possible that he may have influenced the work before he became officially connected with it. But it is hardly possible to doubt that the dominating features of the great group of buildings, the long colonnades and the Hall with its splendid domed tower are Wren's. They were already in hand before Vanbrugh joined the committee and with the Western Towers of St. Paul's the Greenwich towers derive in part from Boromini's St. Agnese.

The Whitehall drawings at All Souls show the same preoccupation with effects of picturesque grouping by systems of related blocks, and in that case also the problem was complicated by the retention of Inigo Jones's Banqueting Hall, which alone of the early palaces had survived the fire. The drawings are elaborately treated with washes and are vast in size, some of them as much as six feet in length, and altogether rather smack of projects by some assistant such as Hawksmoor, rather than first-hand works of Wren himself. All that is known of the intention to rebuild is contained in two notes of Luttrell, who says, first, that Wren was ordered in January 1698 to survey Whitehall, which it was intended to rebuild in four years, and then, in March, that temporary lodgings for the King, and a council chamber, were to be put up at the Westminster end of the Banqueting Hall, the rest to be left till Parliament should decide. None of the drawings seem to take note of this decision of March. The real interest of these Whitehall drawings, especially the first group, seems to be in relation, not to the body of Wren's work either before

or after that date, but to that of John Vanbrugh, who appears first as an architect in 1699. In that year he designed a house for Lord Carlisle, and in 1701 it was begun, with Hawksmoor acting as his assistant, and it is interesting to notice that Hawksmoor's own building at Easton Neston, designed and executed shortly before 1702, shows Vanbrugh's influence very strongly. In 1702, Vanbrugh succeeded Talman as Comptroller of the Works.

Of the curious odd jobs that Wren's position as Surveyor of the Works entailed, the most interesting during the nineties is perhaps that noted by Luttrell in February 1690 : " Sir Xtopher Wren hath completed the itinerant house for His Majesty to carry into Ireland for him to lye in in the field ; it is to be taken to pieces and carried on two waggons that may be quickly fixt up." It is a pity no picture of this contraption is surviving, for it must have given scope to all Wren's constructional ingenuity. Otherwise the records are a chronicle of small beer from the architectural point of view, with the exception of the preparations for Queen Mary's funeral. An engraving of the cenotaph design for the occasion is extant. Even more important is the statement in 1692, that appears in Luttrell and one or two news-letters, that Wren had designed a new House of Commons, to which the news-letters add that materials are at the site and work is to go forward. Whether this referred only to the minor works mentioned in Wren's report of 1691 on the conditioning of the building, or to some large scheme such as that suggested in the

Whitehall plans, it is impossible to decide. Two buildings of the nineties attributed to Wren by long-standing tradition should also be mentioned – the chapel at Trinity College, Oxford, and Morden College, Blackheath. Letters of Wren to his old friend Bathurst about the chapel survive, but these seem to suggest that Wren merely revised and improved a scheme submitted to him, rather in the way that he did at Easton Neston in 1682. The building is a charming one and fitted up by the best craftsmen of the time, including Gibbons, but does not seem to stand in any direct relation to the main current of Wren's work. Morden College is a more obscure matter; it is not far from Greenwich and its founder sat with Wren on the Greenwich Commission, so that there is a possibility, even a likelihood, that Wren had a hand in it, but almost certainly in some such advisory fashion as we have often found elsewhere. A minor building of the nineties that was certainly designed by Wren, but has since been pulled down, was the addition to Christ's Hospital made in 1693-4 and consisting of a large single school-room raised on an arcade. Some drawings exist of an alternative design to that executed. The most striking event affecting Wren in the routine of the Office of Works in these years was the fire at Whitehall, which has been mentioned as destroying one of his most important buildings and giving occasion to the schemes for building a new palace. The fire which destroyed the palace in 1698 had been preceded by another fairly serious one in 1691, when the windows of the Queen's new lodgings that Wren had just built

were damaged by explosions occasioned by fire. The last fire began on the 4th January, 1698, about four o'clock in the afternoon, in the corner of the buildings on the river side towards Westminster, and burnt all night. By seven the following morning it was mastered, but the greater part of the main buildings of the palace had been destroyed, including all Wren's work of the eighties. There is an interesting side-light on Wren and this event contained in the petition of a bricklayer, by name John Evans, who gives an account of some of the events of that night in making an application some years later for the post of King's Master Bricklayer. He says: "And when the Fire happened in the Royal Palace at Whitehall, I immediately went to Sir Christopher's House, where I found him and offered my assistance, who directed me to stay there and take care of some books and other things in his closet, and then went out of his house, but forthwith returned from viewing that conflagration, and in great consternation cry'd out in this manner (viz) Wee are all undone, for the fire hath seized the Banqueting House, For God's sake lett all things alone here and try to save that Fabrick, or to that very effect. Whereupon by God's assistance of my indefatigable endeavours with great expence of money and eminent hazard of my life, I did preserve it from being destroyed, though not by the means Sir Christopher is pleased to alledge in his report, nor had I the least directions from him by what means in particular to perform it, But only in general terms to try to save that Fabrick. And from the time I

received that direction from Sir Christopher and left him at his own house, I never saw him at or near the place where the Fire happened until two days afterward." In Wren's comment on his application he casts doubt on the claims for reward, but admits : " I set him in a very dangerous part in the high window of the Banqueting House," and agrees that it was largely due to Evans that the building was saved.

CHAPTER V

Wren and his builders – the Office of Works under Queen Anne
– last works at St. Paul's and the difficulties with the Commissioners – Wren's family – partial retirement from the Office of Works – dismissal – the last works at Westminster
– architectural writings.

THE first ten years of the eighteenth century are for Wren above all the time of the finishing touches to St. Paul's, and the building of the tall dome of Greenwich. He was still very active at the Office of Works all these years, but the Minutes of the Greenwich Committee seem to show the increasing importance of Vanbrugh in that work. The greatest architectural work undertaken by the State during these years was Blenheim Palace, given as a token of the nation's gratitude to the Duke of Marlborough, and for this Vanbrugh was responsible, with Hawksmoor as his collaborator, though on occasion we find that Wren was consulted and gave advice. Another important work, though much smaller, was the Kensington orangery, and here again Vanbrugh and Hawksmoor seem to have had as much to do with it as Wren. The association of the three men seems to have been of the happiest, to judge by the way in which both the juniors referred to Wren in their later letters, always with affection as well as respect; and even Vanbrugh's letter of protest to the Lord Treasurer, Godolphin, about the management of the affairs.

at the orangery is careful to repudiate any personal charge against Wren. This is a most interesting document, of which the following is an extract:

“ Before I acquainted yr L'dship this Summer with that shamefull abuse in the Board of Works ; of those very officers doing the Work themselves, who rec'd Sallarys from the Queen to prevent her being imposed on by Others ; I made severall attempts upon Sir Chr Wren to perswade him to redress it himself without troubling yr Lordship ; putting him in mind that besides its being utterly against common Sense, it was contrary to an Express Direction to the Board upon the Establishment after the Restoration.

“ He always own'd what I urg'd him to was right and often promis'd to join with me in Overruling so bad a practice ; but when I press'd him to the Execution, he still evaded it, and that so many times, that at last I saw he never intended it, and so I gave your L'dship the trouble of a Complaint.

“ Your Lordship was pleas'd upon it to send us a Letter, in as express Terms as it could be penn'd, that, no such thing for the future should be Suffer'd directly or indirectly.

“ Upon this Order I desired Sir Chr there might immediately be another mason got to work at Kensington upon the New Greenhouse ; but wou'd recommend none to him, leaving that entirely to himself. He at last nam'd One Hill, and gave me leave to send for him and give him Directions ; which I presently did, and he promis'd me to go to Work. But a few days after

finding he had not begun, and enquiring into the reason ; I found he had been frighten'd with some hints of what should befall him if he durst meddle with the Master Masons business. And this had been so put home to him that he sent to me desire I would excuse him. I went to Sir Chr Wren and tould him what had passed. He said the Man was a Whimsical Man, and a piece of an Astrologer, and would Venture upon nothing till he had consulted the Starrs, which probably he had not found favourably enclin'd upon this Occasion and therefore had refus'd the Work. I desir'd he would employ somebody that was less superstitious which he said he wou'd and next day I went out of Town for the North ; but when I return'd I found Mr. Jackson's man at Work. I ask'd one of his foremen who they work'd for : but he tould me One Palmer whom his Master had made his Deputy. I was very much surpris'd at this, and went to Sir Chr Wren, but was much more so when he confessed to me that he had allow'd Jackson to go on, only oblig'd him to enter his Bills in Palmer's Name. I ask'd him if he had forgot your Lordship's Letter and all that had past on this Subject. He said no ; but Jackson would not be quiet without he let him do the Work. This Story is so very improbable I'm afraid y'r L'dship will scarce give me credit for it ; yet it is a plain and literal truth in every Article. As for Sir Chr Wren I dont believe he has any Interest in his part of it ; but y'r L'dship will see by this Decisive proof the power those Fellows have over him wch they never made so effectual a use of as when they prevail'd with him (against

your L'dships Directions) to let 'em have a Clerk of the Works of Whitehall, whom he himself own'd but a Week before he could put no trust in : one who by nature is a very poor Wretch ; and by a many years regular Course of morning Drunkennesses, has made himself a dos'd sott."

It is, of course, impossible to judge how far Vanbrugh's complaint in this letter may have been justified. It may have been simply a case of the new broom, and, as the editor of the Wren Society has suggested, that Vanbrugh did not understand the shifts to which the Office of Works was put to get work done, in those days of long-deferred payments when the Government departments were not in a position to be too haughty with men to whom they owed so much money. As against this, Vanbrugh had been over two years at the Office of Works when he wrote the letter, and in view of the difficulties with Talman, and the questions that were later to arise at St. Paul's, it is at least a question whether Wren's handling of his contractors was not sometimes too easy-going. Wren was a man who had his first administrative experience in good King Charles's golden days, when other things besides loyalty meant no harm. Things were somewhat better in Queen Anne's reign, but not so much. Moreover, Wren was getting an old man, and it seems certain that there were irregularities at St. Paul's.

It seems that age as much as press of work was causing Wren, from 1702 onwards, to delegate more and more work to his juniors. Hawksmoor at King's College, Cambridge, has already been

instanced, but a more remarkable example would be Marlborough House in 1709, if it could certainly be determined whether the architect was Sir Christopher or his son. The confusion that comes of their both having the same Christian name is probably impenetrable, but young Christopher was at this time certainly turning towards architecture, and Campbell, who knew them both, gives Marlborough House to the son. The greatest delegation of work comes in 1708, on the passing of the Act for building fifty new churches, which was to give Hawksmoor his greatest opportunity outside Oxford and to be the occasion of the public employment of such men as James Gibbs, the most famous, and Archer, the most neglected, architect of the times. The recent discovery of some drawings apparently by Gibbs among the Wren collections seems to suggest that they were working together on other jobs than the churches at about this time. Another assistant of Wren who has come to light of recent years is Dickinson. He seems to have been very closely associated with him in his later years, especially at Westminster Abbey, but, dying in 1724, had hardly opportunity to practise as an independent architect. It is possible that the designs for the Westminster dormitory are by him. They were, however, superseded in favour of those by Lord Burlington. Hawksmoor's name has also been suggested in connection with some of those Westminster designs, and he certainly was employed at the Abbey after Wren's and Dickinson's death. These Westminster drawings belong to the very last years of Wren's life, some

of them being of 1718-19 and perhaps even later.

Wren had certainly two moments of glory in Queen Anne's reign, of which the most famous is the laying of the last stone upon the lantern over the dome of St. Paul's. This is said to have taken place in 1710 in the presence of his son Christopher and young Strong, the mason, though the accounts seem to indicate that it must have happened fully two years earlier. From that height the old architect (he was seventy-six at the earliest dating, and had probably been drawn up in a basket as the Duchess of Marlborough describes) could look down at the evidence of an achievement that compares with anything that the great men of the past could show in quality, and in quantity almost rivals the modern successful practitioner. But perhaps an even greater moment was that described by Evelyn, when the Queen, "full of jewels," and beside her the Duchess of Marlborough, "in a very plain gown," went in state to the new cathedral, the interior of which was then just finished, to celebrate the greatest military victory of English history on September 7, 1704. It is pleasant to recall that his old friend Evelyn, who had known the church's beginnings, survived to see it on that day of days, and to record it as one of the last important entries in his Diary. He died in February two years later. Another old friend that Wren lost about this time was Robert Hooke, who died in 1703, but for the last few years of his life Hooke had been a complete invalid, and Wren can have seen very little of him.

In some respects the winding up of that splendid work was accompanied by meanness and petty quarrelling that are not so much tragic as indecent considering the occasion. Towards the end of 1710 and in the early months of 1711, Wren began to agitate for the payment of the accumulated half of his salary, as surveyor to St. Paul's, that had been withheld since 1696. The reason for this suspension of salary was said to be to encourage the architect to press on with the completion of the building, and it may well be that Wren, in his desire to secure that the whole of his design should be carried out, had neglected to build the church in instalments in the way suggested in the original warrant. It is clear that Wren had not been on good terms with the later Commissioners, and things came to a minor crisis over the question of the iron railings to be placed round the outside of the building. Wren had wanted a wrought-iron railing, the Commissioners had forced upon him a cast-iron one to be executed by a Mr. Jones, a founder often employed by the Ordnance Department. The situation was further complicated by the action of the Commissioners in discharging Jennings (the master carpenter, and one of the most important contractors to the church), and endeavouring to get the Crown to prosecute him for fraudulent practice. The upshot of it all was that Wren, after petitioning the Archbishop of Canterbury, the Crown, and the House of Commons, was eventually given his money, the Attorney-General, Northey, declaring that Wren's case was "very hard." The sum in question was £1,375 at Christmas, 1710, and was.

ordered to be paid him by December 1711. A document in the Portland Papers sums up the evidence and concludes with this opinion of the Attorney-General: "On the whole matter from the opinion I have of workmen in general I cannot doubt but that there have been great frauds committed by them in the great work of rebuilding the Cathedral of St. Paul's but have little expectation of advantage from a prosecution of Jennings on such general charges" – and there, as far as the law was concerned, the matter ended. It is perhaps significant that, in the new Commission that was appointed not long after this, some of the most active members of the former one were omitted. Matters did not rest there, however, for a pamphlet appeared entitled *Frauds and Abuses at St. Paul's*, to which Wren published a reply. The whole miserable affair was conducted with the utmost bitterness, and there is a paper among the Portland MSS., apparently by Wren, for it is annotated in his hand, which shows a very human lack of dignity in some of the charges of trickery, corruption and incontinence levelled against the Commissioners.

Wren had, however, some consolation in these times: for example, his own was not the only reply to *Frauds and Abuses*. A more solid comfort to the old man and his work was the presence, since 1694, of his son Christopher as Clerk Engrosser at the Office of Works, and, when Vanbrugh was dismissed from the Comptroller's place in April 1713 for political reasons, there was even some little talk of young Christopher's succeeding him, though it came to nothing.

Two letters of Wren to his son Christopher have survived. In the first, which seems to date from the nineties, he is writing to the young man then on a visit to Paris in company with Strong, a son of the contractor. Sir Christopher is discouraging about a scheme for visiting Italy, partly on financial grounds. "I sent you to France at a time of businesse and when you might make your observations and find acquaintance who might hereafter be usefull to you in the future concerns of your life : if this be your ayme I willingly let you proceed, provided you will soon returne, for these reasons, the little I have to leave you is unfortunately involved in trouble, and your presence would be a comfort to me, to assist me, not only for my sake, but your own that you might understand your affaires, before it shall please God to take me from you, which if suddenly will leave you in perplexity and losse." The whole letter is a little melancholy, and concludes with a postscript referring to the bad health of the second son, William. The second letter is dated 1705 and is written to Holland. It is mainly concerned with public and family news, and contains the sentence : "I am very well satisfied you have layd aside your designe for the army which I think had not been safe or pertinent." It was the year after Blenheim.

Between the writing of these letters, Jane Wren, his daughter, died in 1703, and was buried in St. Paul's, with an elaborate sculptured monument by Bird, one of the chief sculptors employed on the building. It shows her sitting at an organ, and the inscription particularly refers to her skill.

in music. The delicate son, William, survived to 1738. The young Christopher, in the year following his Dutch visit, married the daughter of Philip Musard, jeweller to Queen Anne. It is perhaps significant of a community of interests with his father-in-law that the young man published in 1708 a work on antique coins, of which he was a collector. The son Christopher was returned to Parliament for Windsor in 1712 and again in 1714, and in the following year married his second wife, the widow of Sir Roger Burgoyne, a Warwickshire gentleman, from whose family his father bought for him the estate of Wroxall Abbey, where he settled down in due course as a country squire. There are some evidences that the Wrens had Warwickshire connections, which may have inclined Sir Christopher to this purchase.

On the accession of George I, great changes were made in the Office of Works. Vanbrugh was reinstated as Comptroller and made a knight. The whole constitution of the Office of Works was revised, the most important change being the formation of a Board or Commission to exercise the office of Surveyor. Wren was a member of this body with Vanbrugh, Dubois the Paymaster, and others specially appointed, as an example of whom one may take Brig.-Gen. Watkins with the office of Keeper of His Majesty's Private Roads and Guide in the Royal Progresses, a man who appears very pleasantly in Vanbrugh's later letters. Wren retained the title of Surveyor, but had no casting vote or special authority other than personal. This arrangement was made,

Wren himself tells us, mainly on account of his age, and he adds that he attended as often as his infirmities would permit. Some such scheme had been formulated as early as March 1713 in anticipation of Wren's death or resignation, and contained the suggestion that young Christopher should be one of the Commissioners in remembrance of his father. In the event, no such occasion arose, and young Christopher remained at the Office of Works in his capacity as Clerk Engrosser.

At about this time (August 1716) Wren resigned his Surveyorship at Greenwich Hospital to Vanbrugh. Wren had been attending the Greenwich Committees less and less for some years past, and on this occasion definitely mentions his age as the reason of his withdrawal. It is curious to note that, though Vanbrugh had been dismissed from the Office of Works, he still retained his place on the Greenwich Committee throughout the years he was out of office. The new arrangement seems to be both reasonable and generous and the best possible considering Wren's great age, eighty-four, his immense service to the State, and experience. The old gentleman was in effect retired with full honours, and yet was in a position to keep in touch with the Office with which he had been so long associated. It is possible that the credit of this arrangement may be due to Vanbrugh, who certainly advised as to the reconstruction of the Office at that time, and who may be referring to this occasion in his letter to Tonson in 1719, in which he says, speaking of some later changes at the Office: "I have likewise had a very hard.

disappointment in not being made Surveyor of the Works : which I believe you remember I might have had formerly but refus'd it out of tenderness to Sir Christopher Wren " ; but this amiable and reasonable scheme of things was not destined to endure.

On April 26, 1718, Wren was deprived of his position as Surveyor-General of the Royal Works, and was succeeded by William Benson. There can be no doubt that this was the result of one of the meanest jobs ever put through. Ker of Kersland in his *Memoirs* wrote : " It is very well known that Mr. Benson was a favourite of the Germans," by which he meant the personal entourage of George I. This is confirmed by a letter of Vanbrugh's, written the December before the blow fell, from which it is clear that the conduct of the Board of Works was already called in question, and that Vanbrugh well knew what quarters were interesting themselves in the matter, for he says in a letter to the Duke of Newcastle : " My Ld Sunderland has told me, when your Grace and Ld Stanhope have spoke, he'll then talk effectually wth the Dutchess of Munster." This lady was the most politically important of King George's mistresses, and perhaps it is to her that Wren referred in his letter of the October before his dismissal, protesting against the addition of a balustrade round the upper part of St. Paul's, in which he says " ladies think nothing well without an edgeing." William Benson is hardly known as an architect, except for his own house at Wilbery in Wiltshire and some fountains at Herrenhausen, the King's palace in Hanover ;

otherwise he was a Whig pamphleteer. Of the two architectural works, the fountains confirm the Hanoverian connection; the house, a rather charming though not very ambitious piece of work, is illustrated in Colin Campbell's *Vitruvius Britannicus*, published in 1715. Campbell was evidently a friend of Benson, for when on his appointment the new Surveyor made a clean sweep of the junior part of the office, dismissing Hawksmoor and some of the clerks, Colin Campbell and Benson's young nephew were given places there. It is sad to find Campbell's name in such company, for architectural historians owe him much for his books and he was a not inconsiderable architect.

The plea on which this revolution was made was that of economy, and the new régime was not long in being before, in Vanbrugh's words of January 1719: "I have a wild strange acct. of the rout my friend and Superior Officer, Benson, makes at the Treasury. I find poor Dartiquenave (the Paymaster) scar'd out of his Witts about a Memorial given in by Campbell and Benson the Young to decry the Managements of former Boards and exalt this precious New One." Vanbrugh himself had weathered the storm by the strength of his political friendships. He adds significantly: "Let me but be protected from any dark stroaks in the Kings closet and I have nothing to fear." This memorial, which is extant among the Treasury Papers, eventually brought forth one of Wren's most remarkable letters, dated from his house at Hampton Court, April 21, 1719.

“MAY IT PLEASE YR LdSHIPS,

“My Surprize is equal to my concern to find, that after having serv'd the Crown and the Publick above fifty years, and at this great Age, I should be under a necessity of taking a part in answering a memorial Presented by Mr. Benson to yr Ldships chargeing some Mismanagement on the late Commissioners of the Board of Works.

“It was his Majesties Pleasure, on his happy accession to the Throne to continue me in the Office of Surveyor of the Works ; but soon after, in regard of my great age, He was Pleas'd of his Royal clemency to Ease me of the burden of the Business of that office, by appointing other Worthy Gentlemen with me in commission, which was under such Regulations and Restrictions, as that altho' I had the honour to be first nam'd with the old title of Surveyor, yet in acting I had no power to over-rule, or give a casting Vote :—I did however as often as my Infirmities would permit, attend the Board, and endeavour'd to doe his Majesty all the Service I was able, with the same integrity and zeal wch I had ever practised.

“I doubt not but the Gentlemen concern'd in the late Commission will lay before yr Ldships such particular answers to the Memorial of Complaint, as will be satisfactory ; I crave leave to Refer thereto ; and may presume to say, that notwithstanding the Pretensions of the Present Surveyor's Management to be better than that of the late Commissioners, or theirs to be better then what Preceeded, yet I am perswaded upon an impartial view of matters, & fairly distinguishing

all particulars, with due consideration had to long protracted payment of artificers, there will be no just grounds for the Censuring former Managements ; and as I am Dismiss'd, having worn out (by God's Mercy) a long Life in the Royal Service, and having made some Figure in the World, I hope it will be allowed me to Die in Peace.

“ I am, May it Please yr Ldships
With most sincere Respect
Yr Ldships most Obedient Humble
Servant

“ CHR. WREN.”

The letter is not in Wren's own hand, though he signed it, and the signature is very shaky. It is satisfactory to record that, in the course of the summer following, Benson displayed such egregious incompetence in the matter of some repairs to the House of Lords that he was dismissed with ignominy and the whole of his following with him. He himself still had sufficient purchase at Court to get himself compensatory pickings, and Campbell, whose architectural views were in fairly close accord with those of the Palladianists who reacted against Wren and his Baroque successors, crept back in due course into the State employment.

After his supersession at the Office of Works, Wren, according to *Parentalia*, retired to the house at Hampton Court that for some years past he had leased from the Crown. Five years of life remained to him, of which we know little. He applied himself once again to the problem of longitude, and left a curious memorandum upon

it in cypher. As to architecture, he still retained the surveyorship of Westminster Abbey, and is said to have come up from time to time to a house in St. James's Street in order to keep his eye on that business. Wren had been appointed to this position in 1698, and during Anne's reign had been gradually getting the fabric into decent repair, paying special attention to the vaulting. In 1719 his scheme for the great north transept front was approved and his last executed work put in hand. The faithful Dickinson, who had been associated with him at Westminster from the first, was still with him there, and must be mainly responsible for the extant drawings of this and other projected works of which the most remarkable is a curious domical central lantern. The Wren work on the north transept front has been restored out of existence, and the most important relic of his surveyorship is the long report on the building drawn up for Bishop Atterbury in 1713. This is a most interesting document and, like the early Salisbury Cathedral report, bears witness to the enlightened character of Wren's attitude towards Gothic architecture, though inevitably much of the historical matter of the report is far beside the mark.

There has been little mention of Wren's architectural writings in this book. There are not very many of them and, except for these reports and memoranda on particular problems, none are complete. They are collected together for the most part in *Parentalia*, and consist of short discussions of celebrated ancient buildings, as the Mausoleum of Halicarnassus or the Temple of

Diana at Ephesus, as these were known to him from the descriptions of Pliny. The former, no doubt, dates from the time of his discussion of the subject with Hooke, and the designing of the Mausoleum for Charles I. The two most interesting are a tract largely concerned with the geometry of vaults and domes, and another fragment which is hardly more than a jotting of aphorisms, some of which have a great interest, as for instance: "There are two causes of Beauty, natural and customary. Natural is from Geometry, consisting in Uniformity (that is Equality) and Proportion. Customary Beauty is begotten by the use of our senses to those objects which are usually pleasing to us from other causes, as Familiarity or particular Inclination breeds a Love to Things not in themselves lovely. Here lies the great Occasion of Errors; here is tried the architects Judgement: but always the true test is natural or geometrical Beauty." And again: "The architect ought, above all things to be well skilled in Perspective; for everything that appears well in the Orthography, may not be good in the model, especially where there are many Angles and Projections; and everything that is good in Model, may not be so when built"; an interesting point in relation to his extensive use of models at St. Paul's. Rather similar to these are the marginal notes on Wooton's *Elements of Architecture*, published by the late Sir Lawrence Weaver from a copy that belonged to Wren which is now at Sherburn Castle; for example, of an overlighted building, as against Wooton, Wren says: "Christ-church Newgate St was practically nothing but

window and fitter for a stage than a church, although for the kind of building it is a thorough piece of work." This is one of the very few comments of Wren's on a building of his own.

The last series of architectural designs for Westminster, those for the school dormitory, have been mentioned already. In 1722 all the schemes emanating from his office, whether by himself, Dickinson or Hawksmoor, were superseded by the design of Lord Burlington, the young Palladianist architect who, with his wealth and social and political position to reinforce him, was to establish himself in the next few years as an arbiter of architectural taste. Burlington's importance in the history of English architecture is as the leader, with his friend William Kent, of the Palladianist reaction to the free Baroque of Wren, Vanbrugh and Hawksmoor. It is curiously fitting that his first public achievement should be at Westminster, the scene of Wren's last employment as an architect. Within a year the great man was dead. By tradition he had made a trip to London and had visited St. Paul's, on returning from which to St. James's Street he had caught a chill. On February 25, 1723, his servant is said to have found him dead in his chair on coming in to waken him from his after-dinner nap.

Wren's school, as we have called it, did not long survive him. Dickinson died the year following, and Vanbrugh in 1726. Hawksmoor lived on to complete the towers of Westminster Abbey, All Souls and Queen's Colleges at Oxford, and to build at Castle Howard the great mausoleum that seems in some degree to be based on Wren's

studies for the St. Paul's Baptistery. He died in 1736, leaving the Palladianists to finish it. But, though Hawksmoor and Vanbrugh were personally close to Wren and learnt much if not everything from him, their curious "Heroic" Baroque is a different thing, more declamatory, more coarse-grained than the architecture of their master, which kept to the end of his days something of the spirit of the lyric poets of his youth.

APPENDIX

NOTE ON THE PORTRAITS OF SIR CHRISTOPHER WREN

*Based on notes kindly supplied by C. K. ADAMS, ESQ.,
of the National Portrait Gallery*

THE earliest of the portraits which indisputably represents Sir Christopher Wren and is known to be executed in his lifetime is the marble bust in the Ashmolean Museum at Oxford. This was executed about 1673 by Edward Pierce, a carver who worked much for Wren. It was presented to the university by the architect's son in 1737.

The portrait in the possession of the Royal Society was presented by Stephen Wren, grandson of Sir Christopher. An engraving made from this portrait by Elisha Kirkall (*d.* 1742) is inscribed "I. Closterman ad vivum pinx." The costume and Wren's age suggest that it was painted about the year 1695.

The portrait in the Sheldonian Theatre at Oxford is described as being begun by Verrio and finished by Thornhill and Kneller, and presumably represents Wren a little before Verrio's death in 1707.

The portrait in the National Portrait Gallery is inscribed Sir Godfrey Kneller and dated 1711. It was engraved by John Smith in 1713, and Kneller's name and the date of painting appear on the engraving.

Besides these authentic portraits there is the death-mask bequeathed in 1851 to All Souls College, Oxford, by a Miss Wren. It is possible that the Rysbrack bust at Queen's College, Oxford, dated 1726/7 is based on this, and that the portrait of Sir Christopher in *Parentalia*, inscribed "Engraved from a bust," is founded on this bust.

The boxwood plaque at the Royal Institute of British Architects, which belonged to James Wyatt, P.R.A., is ascribed to Grinling Gibbons, and may well be a contemporary portrait of Wren, whom it certainly represents.

Of other portraits called Wren, that at Welbeck, formerly at Strawberry Hill, appears to be of the time of Charles II, but the coat of arms represented in the picture is not Wren's, and the subject may be one of Wren's wealthier contractors. Sir Edwyn Hoskyns's portrait, inherited from a lineal descendant of Wren's, appears to represent a man not over forty years of age about A.D. 1700. It is possibly Christopher Wren, junior; the pair of dividers that he holds agrees well with the known architectural ambition of Sir Christopher's son.

BIBLIOGRAPHY

SEVERAL short lives of Sir Christopher Wren are extant, among which those by Miss Phillimore, Dean Milman, and Sir Lawrence Weaver may be mentioned. These are in the main based on the *Memoirs of Sir Christopher Wren* by Elmes (1823), and *Parentalia*, a compilation of family records published by Sir Christopher's grandson in 1750. They do not, however, take the critical consideration of the material much further than the compilers of these source books. Of recent years the Wren Society volumes have been steadily adding to our documentary knowledge and publishing the drawings of Wren and his contemporaries.

Stephen Wren : *Parentalia*.

Elmes : *Memoirs of Sir Christopher Wren*.

Aubrey : *Brief Lives*.

Spratt : *History of the Royal Society*.

Ward : *Lives of the Gresham Professors*.

Wren Society : Volumes to date.

Royal Institute of British Architects : Sir Christopher Wren Memorial Volume.

Oxford Historical Society : *Life and Times of Anthony Wood*.

Gunther : *Early Science in Oxford*.

Gunther : *Notebooks of Sir Roger Pratt*.

Tipping : *English Homes*, Period IV, vol. i ; Period V, vol. ii.

Tipping : *Grinling Gibbons*.

• Birch : *City Churches*.

Belcher and Macartney : *Later Renaissance Architecture in England.*

Knoop and Jones : *London Masons of the Seventeenth Century.*

Royal Commission on Historical Monuments : Vols. :
London East, West, and City.

Willis and Clark : *Architectural History of the University of Cambridge.*

London County Council : Survey of London.

Domestic State Papers.

Treasury Papers.

Robert Hooke : *Diary.*

Pepys : *Diary.*

Evelyn : *Diary.*

Vanbrugh : *Letters.*

Inner Temple Records.

Middle Temple Records.

Caroë : *Tom Tower.*

Brett-James : *The Growth of Stuart London.*

Perks : "London Town Planning Schemes in 1666."
R.I.B.A. Journal, 1919.

